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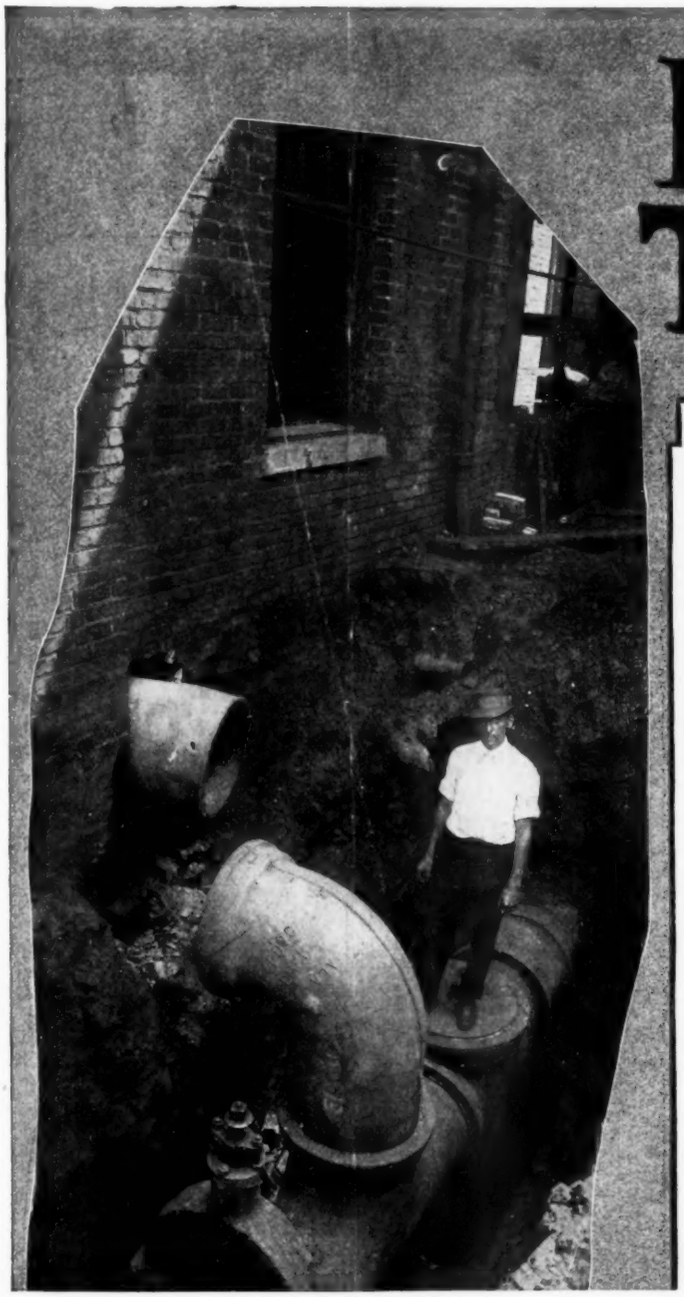

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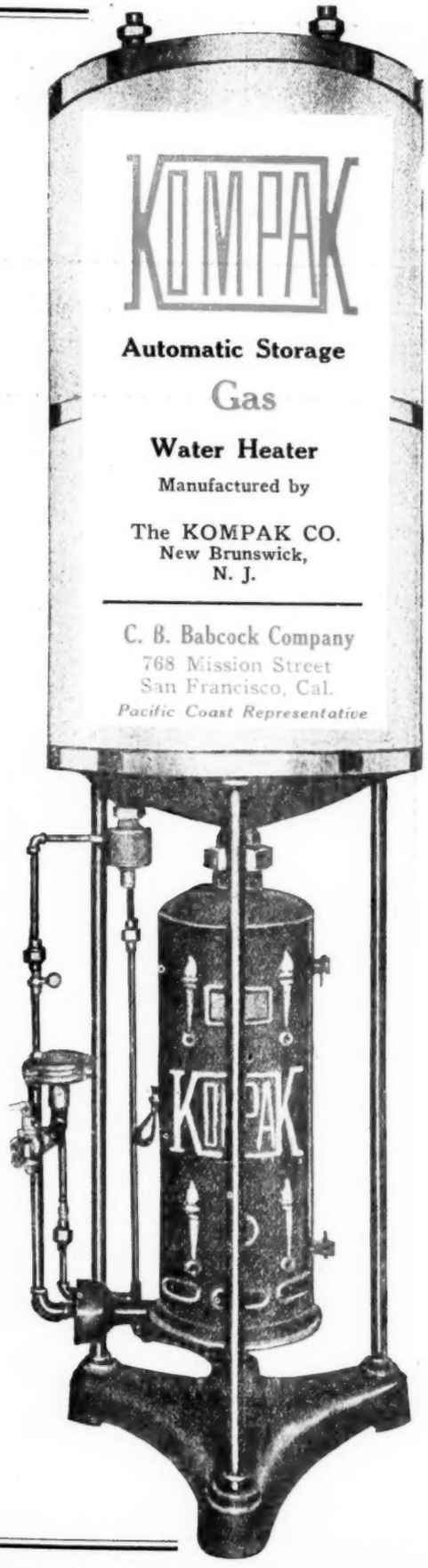

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European Influences Affect Gas Industry in Other Parts of the World

Indications Look Bright for Excellent Export Business of American Gas-Making and Distributing Branches

By L. W. ALWYN-SCHMIDT

The gas industry and gas technique originated in Europe and for many years Europe was the center of all technical progress in gas making. With the advance of years a gas industry of its own was born in the United States and a new center of activity appeared which has remained singularly insular in its influence upon gas making in other countries. If one goes to-day to Asia, to South America, to South Africa or to the minor countries of Europe one will find either English or German gas appliances in use but, at least before the war, only very few American gas installations were employed. Somehow, the American gas industry seems to have failed in the past to put its impress upon the gas industry of other countries. Since the war, and especially during the period following it, the American gas industry has done slightly better.

Meters as an Index

The American export statistics unfortunately do not differentiate between water meters and gas meters but record both under the same heading. Considering the great importance of each of these activities this is rather regrettable, as it makes it practically impossible to find out those foreign countries that are interested in American gas equipment. Canada is recorded as having bought meters valued at $276,000 during the last year, and Canada no doubt is at the present time our best market for gas equipment. It is far ahead of all other countries, taking nearly 40 per cent of the total export of meters. Another market for meters of some importance is Argentina, with a total purchase value of $53,000 during the last year. But it is doubtful whether this figure is fully indicative of the actual turnover done by our gas meter manufacturers as Argentina is comparatively unimportant as a purchaser of gas equipment. Cuba has several gas plants and, therefore, provides a fair market for gas equipment, so does China. But it seems that a better indicator for the scope of the American export trade in gas equipment is found in the statistics referring to the export of gas engines. Where water and gas meters are grouped together the danger is that the results are distorted. This is different in the case of gas engines. If gas engines are bought by any country there must be gas to be had for their operation. The size of the sales of gas engines, therefore, may very well serve to show the significance of these markets for the American gas industry. The gas engine is also of European origin. But American engineering art has been rather successful in applying the European design to American conditions with happy results for the user. To-day the American gas engine fills a niche for itself in the foreign commerce of the world. Wherever it is bought it is asked for, owing to some special advantage all of its own. This has secured to the American gas engine a fair market in the past. During the war conditions, of course, have changed somewhat. The American engine was bought then because there was no other to be had. This has introduced the American type more freely in other countries and, while it was bought in the past possibly with some special purpose in mind, it is now ordered freely in competition of European designs.

Export of American Gas Engines Is Growing

The gas engine takes a rather important position in the industrial household of the world. It is often the only power source that can be employed, and certainly the only one that serves its purpose in such regions where there is no suitable water for boiler work, but sufficient coal or other gas-making material for carbonization. The small individual gas plant, making gas for the feeding of a large gas engine, is not so rare, however, as it might be expected on the showing of conditions in our own market.

All in all 3,636 gas engines were exported during the last year from the United States. The figure does not seem at all too high, but it is more than double that of 1918, and the statistics for the first eight months of the present year show that it most likely will be exceeded again during the present year. So the demand for American gas engines is certainly on the increase. As could not be expected otherwise Canada is the best individual market for American gas engines. Not only is Canada excellently placed as a customer for American equipment of all kinds but the economic conditions in

the two countries are practically alike. In fact, reports from Canada show that the farmers and industrials of that country have a very open eye for the possibilities of the gas engine, making a very effective use of it. Small individual gas plants are to be found comparatively frequently and there is promise for a considerable extension of this system of farm power supply all over the dominion. Under such circumstances one does not need wonder that the demand for gas engines from Canada has risen in one year from 240 to 1,714 machines, while the price paid for these engines has trebled. In all, Canada spent $181,000 for American gas engines during the last year. Our next important customer for gas engines is the Philippine Islands. The Philippine Islands spend nearly $45,000 for gas engines in the United States, but they are behind several other countries as to the number of the engines that were shipped. The reason is that many high-power machines were shipped to the islands during the last year which are finding there employment upon plantations and in small factories. The plantation industry of the islands, especially, requires much power of the medium kind that is just supplied excellently by the gas engine. One hundred and four engines in all were sent to the Philippines against fifty-five during the year 1918.

The Philippines in this respect differ from Australia, another of our important customers. Australia received during the last year 361 engines costing $40,000. It will be noticed that while the price of the engine sent to the Philippines averaged $4,000 approximately that of the engine type sent to Australia is of the $1,000 price level or slightly more. This indicates very nearly the difference in the character of the business done with the two markets. Also Canada is buying a comparatively low-priced engine which shows the likeness of use to which the gas engine is put in the two principally agricultural markets, Canada and Australia. The machine type shipped to China varies a great deal. During the last year China spent $44,000 in the United States for gas engines and bought fifty engines in all. Judging from all accounts China requires the gas engine to-day for two special purposes. One is to supply power to its rapidly growing industrial enterprises. The other is to use it as a motive power for the production of electrical energy. There are various large beds of coal in China and coal is used as fuel by several of the large railroads. These railroads own considerable repair shops which they light with electric light. The power as a rule is furnished by internal combustion engines of the gas type. The growth of the electrical power industry in China is a reason why China requires to-day many gas engines of medium power development. The Chinese electrical central stations are mostly still very small and no other kind of power generator seems to give the same good service as does the gas engine, provided always, coal can be supplied cheaply.

Next to China, Mexico deserves the special attention of our gas industry. Conditions in Mexico of course vary greatly from those governing business in her northern neighbor, but Mexico, nevertheless, has always proved to be a good market for American products. More the pity that this pleasant relationship has been troubled somewhat during the last years. The state of semi-revolution that has existed in Mexico during the past few years naturally does not add to its suitability as a market. But the last year had brought already a recovery. One hundred and fifteen gas engines were sold to Mexico at a price of $35,000. This is more than double the sales of the year 1918. Mexico may very well be in the near future an excellent market for gas-making equipment of all kind. The industrial possibilities of the country are only partially developed, yet there is no doubt that, given a period of rest as that enjoyed by Mexico under the late President Diaz, soon industry and agriculture will thrive again as they have done in the past. The natural riches of Mexico are very great and the impediment of lack of coal that has retarded the development of the gas industry in other parts of Central and South America does not exist in that measure for Mexico, which can be easily supplied with coal. The gas engine has proven to be an excellent power source for mining, dairy farming and other industries of this character which all may very well prosper in Mexico. Hence Mexico deserves much attention from our manufacturers. That mining enterprises are a ready field for the gas engine is shown by the good success that has been obtained in recent years in Peru, where fifty-five gas engines were sold during the last year at a cost of $30,000.

Our European Markets

During the last year 470 gas engines, costing $90,000, went to England and 106 costing $44,000 went to France. Other buyers of American gas engines in Europe were Belgium, Denmark, Greece, the Netherlands, Norway, Portugal, Spain and Sweden. Specified statistics for the present year are not obtainable yet and it is therefore impossible to say whether the European business has continued upon last year's level or whether it has changed to the better or worse as the case may be. The sales to France during 1919 represent a considerable increase over 1918 figures but little increase was noticed in the number of engines sold to England, although their value rose at the rate of $35,000. In practically all sales going to Europe the assumption is that they take place on American account and that the equipment is to be use dprincipally in the industries controlled by American capital. The competition of the European makers of gas engines is too large to permit our engines to enter freely, and former experience has shown that such engines are practically only bought by American houses, or in case the purchaser could not get a European-built engine. The war, of course, also has changed much in this condition. Our manufacturers, however, will do well, not to expect too much from Europe in future.

American gas-making equipment has been exported in larger quantities during the war than before. The main reason for this increase has been the elimination of that European influence from the world's markets which in the past has acted detrimentally to the interests of our gas equipment industry.

Influence of Trade Press Upon Export Trade

It is not exactly easy to define the character of this influence and the manner in which it exerted itself. It consists in fact in a co-operation of a great number of various conditions which in the past have favored the European makers. To start with, gas making was first introduced in Europe and has spread from there to other parts of the world. Gas experts have studied the art of gas making in Europe and having become acquainted with European methods, they have been in-

(*Continued on page* 453.)

Status of Private Property and the Future of Individual Enterprise Now Being Fought Out in Numerous Court Rooms

William L. Ransom, Former Chief Counsel, New York State Public Service Commission, First District, Speaks on Public Utility Company in Court

There is great need just now that all action taken by public utility companies in court shall be based upon a broad, full understanding of the common problem and the general interest, declared Judge William L. Ransom in a paper at the American Gas Association convention.

For reasons to which I shall later refer, I believe that the whole future of public service enterprises, privately owned, financed and operated under governmental regulation, depends on the outcome of litigation now being fought out in many forums, some of it destined to find its way to the nation's great court in Washington.

Unless it prove true that even in a time of stress the processes of juridical action can be made to function so as to make the constitutional guarantees an actuality reflected with saving promptness in the adequacy of operating revenues, the warfare which has been waged against private capital in public service enterprises will have achieved its purpose of driving the investor from this field.

Just as truly as on any battlefield or in any storied contest of history, the status of private property and the future of individual enterprise, energy and thrift is now being fought out in countless courts, in a battle-line as broad as the confines of our country.

And under our system of jurisprudence, where great questions of public and general right are left to be fought out in a single contest between two litigants, a decision unsoundly conceived in one case may impair the future of every enterprise in this industry.

A single company, casually and in obedience to some exigency, may urge or acquiesce in a view which acquires the force of precedent along lines harmful to the rights of all.

So this is a time for full information and for considerate action in each case foursquare with the broadest interests of the industry; and I have been glad to see the American Gas Association's permanent staff grow in usefulness as a clearing-house of information and good counsel along these lines.

Brought to Court to Avoid Confiscation

The topic announced for me I shall discuss only in relation to rate litigation, and shall not refer even to the interesting litigation arising under the more recent tax laws. A period of sharply rising costs of operation has brought many of our public utilities to court for relief from confiscation. These instances of resort to the courts by utility companies have been much more numerous than at any other era in American jurisprudence, and the properties and operations involved have been far more extensive. This recurrence of appeals to the equity jurisdiction of the courts, Federal and State, brought problems of procedure and practical handling for which earlier experience had developed no sufficient precedents. The magnitude of the tasks suddenly thrust upon tribunals already burdened with the ordinary types of litigation was overwhelming.

Reasons for this may be briefly sketched. The great development of the gas, electric and street railway industries in the United States had taken place during a period of *declining* costs of operation per unit of service rendered. The units of *operation* were being enlarged and improved; the *volume* of service rendered was increasing rapidly; the cost per unit of service rendered (e. g., per passenger carried, per thousand cubic feet of gas sold, or per kilowatt-hour of electricity sold) was declining. During this period an elaborate mechanism, administrative and quasi-judicial in scope but closely identified with the political and policy-determining branches of government, was set up in most of the States, under pressure of a public opinion which apparently sought to see to it that public utility rates were revised downward at least as fast as conditions permitted within the limits of constitutional right.

For several years American industry has now been in the throes of a period of rising costs. In many instances the mechanism devised to force rates *down* has failed dismally, and has been found virtually powerless, to raise rates flexibly so as to keep revenues at least equal to expenses and yield the investor a reasonable return on the moneys devoted by him to the public service in the expectation that the public will permit the utility to charge rates enabling him to be fairly compensated for the use of his money. The inability of the State commissions and the failure of the State legislatures to grant relief absolutely essential for the continuance of service has been responsible for throwing upon the courts the task of preserving the constitutional guarantees and insuring that until the State regulatory processes are empowered to function, confiscation shall not be inflicted and essential public services broken down.

It will serve no useful purpose pertinent to our present discussion to dwell at length upon procedural difficulties which have developed. You are as familiar with those conditions, and as business men you have doubtless felt the delays at least as keenly. When the conditions were of common cognizance, and the need for relief was great, weary months were often required to be spent in solemnly proving facts fairly known to everybody. The enforced taking of thousands of pages of printed testimony, the expenditure of thousands of dollars for the testimony of engineers and accountants, the nerve-racking contest for methods of proof which might bring relief before too late are some of the factors which have

emphasized that the *administrative* machinery of rate regulation set up by our States was working rather ponderously in a time of great need, and that the courts had not altogether co-ordinated and put in proper perspective, as bases for prompt relief, the action of the State regulatory bodies in recent years.

Within reasonable limits of time I can refer only to a few instances of the kind I have in mind.

Weight to be Given by the Courts to Official Action by Regulatory Bodies

If the processes of our courts are to afford a real protection alike to the public which uses public utility service and the public which invests its savings in the properties necessary for furnishing that service, there is need that the courts should give a larger weight to the action of the regulative agencies of the State and enforce a rigorous estoppel against official representatives who try to repudiate and avoid the consequences of the administrative action of their own or other State departments. May I cite a few instances which have come under my personal observations?

The City and the State of New York place certain values upon all the land used for gas purposes within the City of New York. They employ, for this purpose, men of real estate experience, chosen by civil service examinations as to their qualifications. These officials make assessments, upon their oaths, and state annually the sums for which, in their judgment, the respective parcels of land would sell, if wholly unimproved. Upon the values so determined and assessed the city and State require the corporate owners to pay taxes at the rate fixed from year to year.

Nevertheless, when I offered, in a local rate case last year, to stipulate with the Corporation Counsel and the Attorney-General that the value of the company's land was at least as much as the sum at which it was assessed, the offer was spurned as preposterous, and when I called the commissioners who had made the assessments and tried to prove the values they had placed on the land for tax purposes, the legal advisers of the State and municipal taxing authorities fought bitterly to exclude the testimony and establish a lower value for the company's land.

To me it seems a reasonable proposition, unless governmental agencies have lost their sense of fair play, as well as their sense of honor, that if, for example, the Government requires a utility to pay taxes on a given *quantum* of property investment, it should promptly, and at all hazards, secure to the company's investors rates permitting an adequate return on *at least* that *quantum* of property. Oftentimes the value fixed for tax purposes may fall far below the total property investment on which the company has a right to earn a return, but the spectacle should be ended of *one set* of governmental officers trying to establish the highest possible value for the company's property as that on which the company should pay taxes, and *another* set of officials trying to prove that the same property has little or no value at all in a rate proceeding, and *both* sets of officials, and several others, trying to prevent the company from earning anything at all on either the highest or the lowest value claimed by any of the public authorities.

A few years ago a great modern gas plant was erected in this city. Temporary obligations were issued to finance the construction work, and when the project was completed application was made to the regulatory authority to issue bonds to capitalize this addition to capital. The work had been done virtually under the eyes of the regulatory body. Minute and complete accounts had been kept; the properties and equipment installed had been inventoried; the vouchers and inspectors' certificates had been arranged to facilitate the work of checking. When the application for the bond issue was presented to the commission, the accountants and engineers examined and verified the accounts and supporting vouchers, checked upward of 75 per cent of the inventoried items, selected at random, and reported to the commission that the moneys had been actually and properly spent and that the resultant properties had been acquired and were in use. Accordingly the commission authorized and approved the issuance of the bonds.

Five years later there was need to prove in court the property acquired at the time the plant was built and its cost to the company. I offered in evidence the action of the commission, its order stating the capital expenditure approved, the opinion showing the results of the checking and verification of the commission's accountants and engineers. Did the Attorney-General, the Corporation Counsel, or even the commission's own counsel recognize that weight or controlling effect should be given to this deliberate action of the State regulatory authority five years before? Not at all. They strenuously objected to its being received in evidence at all, and forced the company to spend time and money in submitting further proof of facts not fairly open to contest from any public representatives.

I might cite many similar instances of refusal on the part of public authorities, in their capacity as litigants, to recognize the weight which must be given to official action of the regulatory tribunal, if there is to be any method of dealing with rate questions in the courts within reasonable limits of time and expenditure.

In a rate case in this district counsel for the defendant public service commission interposed a plea that the complainant company should be denied relief for failure to comply with the requirements of the 22-c.p. statute. Yet this same public service commission, in the performance of duties devolved on it by law, had made frequent tests of the gas supplied by the complainant, and had embodied the tests made by its gas engineer in a formal opinion, signed by its distinguished chairman and adopted by the commission. Those tests and that opinion showed clearly that the company had complied with the statute, yet when I offered the document in evidence its admission was vigorously opposed by counsel for the commission, along with the other public representatives.

The same commission urged upon the gas companies the duty of providing more storage space for coal, and then, in the next rate case, claimed that the storage space the company had was not land used and useful in the gas business, although the aggregate of such space was less than the commission had advised. Not long ago the commission found that an emergency existed as to the supply and price of gas oil, and that some companies were confronted with the prospect of shutting down, for lack of oil and lack of funds to procure oil. The conditions as to oil supply and price were very clearly developed

before the commission by witnesses called to the stand by the commission itself, and at one of the hearings the presiding commissioner very tersely and accurately summed up the situation, as his very great practical knowledge enabled him to do. *The commission knew the facts,* as it was charged by law with the duty of knowing, in behalf of *all* the public, the companies as well as the consumers; yet when I offered in evidence, in a rate case in court, the statements of the commission—one of the parties in the case—with or without the full record of facts adduced by the commission on the hearings held before it, objected strenuously, and the objection was sustained. And in the very month in which the commission, in its judicial capacity, found that 14 cents a gallon was the price necessarily being paid for gas oil by one local company, and increased its rate accordingly, counsel for the various public authorities, including the commission, were solemnly asserting in court that a price of 7 cents a gallon was too high and that several cents per gallon should be cut off that price. And within a fortnight, evidently at the very hour that counsel for the various public utilities were assuring three judges of our Federal court that the price of bituminous gas coal had fallen to less than $5 per ton, the public service commission, in its administrative capacity, and in the exercise of its duty of safeguarding the public against stoppages in the supply of gas, was urging the companies affected to place contracts for many thousands of tons of gas coal for the coming winter at prices averaging $14.25 per ton.

Left Hand not Permitted to Know What Right Does

Verily, under our modern plan of regulation, the left hand is not permitted to know what the right hand doeth! And within the present week I have listened to an earnest, insistent plea from the commission and from one of its assistant counsel that a gas company agree to make a large extension of mains into an outlying territory which it could supply with gas only at a cost exceeding $3 per thousand cubic feet, aside from any return on its investment in existing plant, mains and facilities, whereas day by day the commission, through the same assistant counsel, has been trying to prevent that gas company from charging more than 80 cents per thousand cubic feet. Not long ago the commission ordered a gas company to extend its mains six miles to serve a territory it could serve only at a great loss under the existing rate. When the company contested the order in the courts the commission said that the company should build the extension, and that the commission would view it as one of its duties to see that the company secured an adequate rate. When the commission, in 1919, refused further extensions of time, the company built the extension. When the company sought an increased rate the commission opposed it, and its counsel claimed the company was not entitled to earn a return on the cost of the extension, because it had done the work in 1919, when costs were high.

What a Regulatory Tribunal Determines and Recommends Must Be Given Weight

I have cited these instances, not in any criticism at all of public officials or the commission's plan of regulation, because I believe in commission regulation, and the men who have done these incongruous things are friends for whom I have a real respect. The fault is in the failure of our regulatory and judicial system to recognize as yet the meaning of the new machinery which has been set up and the recognition which must be given to its decisions and its action. What a regulatory tribunal determines and recommends must be given weight *in behalf* of a public utility company no less than against it, and such determinations must be given ready and unhesitant effect in the courts, and short shrift should be given to other representatives of the legislative power of the State in trying to repudiate them.

The Weight to Be Given to the Books of Account of the Public Utility Companies

In the Federal courts of this district, during the past year, we have been fighting out the question of the admissibility of a gas company's books, accounts and records, *in its own behalf*, in a suit involving its rates and operations. We have been contending for the proposition that if the Government subjects the finances and operations of a public service company to a constant and inquisitorial supervision and analysis, in the form of a uniform system of accounts, and closely scrutinized reports rendered under penalty, the operating data thus brought together under public scrutiny ought to be recognized as the available basis for official action in *favor* of as readily *as against* the company, and those who have required the company to spend much time and money in complying with these regulatory requirements ought not to be permitted to deny the company the benefits of such compliance in good faith.

From the point of view of the public utility company in court, and in the interests of shortening and simplifying the processes of proof, nothing is more important or more fundamental than the defeat of those who have prolonged rate litigation by forcing resort to common-law proof. If a company conducts its operations under a continuing public supervision and keeps its accounts according to prescribed forms, and spends many thousands of dollars annually in complying with minute regulatory requirements, and throws open its records, its properties and its tabulations to a rigorous check in advance of trial, what could be more fair and equitable than that the exhausting, time-consuming and tortuous processes of common-law proof be abated and weight be given to all this that has been done under public scrutiny and at the public instance? I may add that I have been more interested in the contest as to the admissibility of a public utility's books and accounts in evidence in its own behalf, for the reason that it involves also the accuracy, fairness and dependability of the work done day by day by the bookkeepers, clerks and accounting staffs of the companies—the men who in the inconspicuous and often inadequately paid positions carry on the detail work of the organization and record its transactions. Back of the array of legal decisions and precedents marshaled pro and con I see

a host of employees doing faithfully and honestly and accurately a multitude of daily tasks of a sort hitherto ranged as humble and routine. I have come to believe in these men and in the fidelity and integrity of their work, and I have been glad to see their work vindicated and given an added dignity and importance in the scheme of things.

I am glad to be able to report progress along this line. In the District Court of the United States for the Southern District of New York there have been three recent ruling which reflect the common sense and practical necessities of the situation. In the Consolidated Gas Company case last August Judge Learned Hand made the first pronouncement, from which I shall briefly quote (267 Federal Reporter, at page 231, et seq.):

"The defendants objected to the reception of all these books on the ground that they were not properly proved. Probably the proof was inadequate, even under the present-day laxer rules, had they been used in an ordinary case, as, for example, to prove transactions recorded in them on which obligations of a third person depended. The case is not such. This is a suit between the authorities of a State and a company long since recognized as performing a public service and under the regulation of the State. Article IV of the Public Service Commissions Law of New York puts the entire conduct of such companies as the plaintiff minutely within the regulation of the public service commission. Section 66 gives the commission general supervision over all such, power to investigate the quality of their services and to fix its character, to prescribe the form of the records and books it shall keep, to examine its officers and these records, to keep informed as to its doings and its property, to require a detailed annual report including its receipts and expenses and any other important facts it may wish, to enter upon its property and examine its books and vouchers, to compel the production of any such, to subpoena its officers, and to compel it to keep its accounts of separate businesses separately. Books kept in accordance with orders lawfully promulgated by the commission under such powers are on a different footing in a suit based upon the action of the State and against its officers, from even the same books if attempted to be used elsewhere. They have a public character derived from the supervision which can be and is exercised over them. The authorities are not, of course, bound by them in any event, but, prepared as they are, under their direct and constant supervision, they can scarcely be put in the category of the usual ex parte entries about whose admission the cases are concerned. The State having had so much hand in their creation and such continuous power of examining them, should not be entitled to demand a verifications first-hand of every item by common-law proof before they become prima facie competent. The guarantee of their truth is sufficiently established by the scrutiny to which they are always subject and the penalties which follow upon a disregard of the commission's orders (Section 73). It would indeed be an incredible burden to require every item to be separately established, and even these defendants have not gone so far as that. But if the books are not prima facie competent, they might call for such proof, nor can I reject them without putting the company upon their mercy."

When the public authorities of the State of New York sought, in the Kings County Lighting Company case, to repudiate and escape the fair consequences of their own performance of statutory duty, Judge Hough, on Oct. 13, 1920, said:

"This fundamental exception is necessarily disposed of by the ruling of Learned Hand, J., in Consolidated Gas Co. vs. Newton (opinion filed in this court Aug. 4, 1920), unless I should feel obliged in conscience to disagree with my colleague. Under all ordinary rules of procedure, Judge Hand's opinion is now the law of this court.

"But I am not in the least inclined so to disagree. The object of the statute has been well pointed out in People ex rel. New York Railways Co. vs. Public Service Commission, 223 N. Y., at 378. It is to make the method of accounting by regulated corporations uniform 'so that the accounts could be readily comprehended by those required to examine the same.' The object is 'not to regulate the management of their finances but to show what the management was.' While the public service commissions in this State are not in any full sense rate-making bodies, they may be described as the eyes of the commonwealth to keep watch on the public utilities of the State. It is for this purpose that they are authorized, and indeed directed, to regulate account keeping to the end that the act of seeing what has been done may be easily performed.

"The system is now almost nation-wide, and the most prominent example of its application is the system of railway accounting promulgated and enforced by the Interstate Commerce Commission.

"The use of entries kept in the regular course of business and of abstracts of such entries, when the practical inconvenience of producing the entrants on the witness stand plainly outweighs the probable utility of so doing, has greatly increased of late years, and properly so. Otherwise modern business could not be investigated in court."

In the New York & Queens Gas Company case, decided on Nov. 4, 1920, Judge Julius M. Mayer concisely said:

"Common-law proof of each and every of the thousand set items of the plaintiff's books of account would result in a practical denial of justice. The defendants had full facility to examine into and test the accuracy of the books. Capable cross-examination rarely fails to disclose errors, omissions and inaccuracies, and injustice is rarely done in a case like this where there has been such full opportunity for examination."

The Bases of Valuation of Public Utility Property

This in itself would be a subject for an address, or a series of addresses, and I can do no more than sketch certain personal impressions of its relationship to the public utility company in court in quest of relief. For my own part, I do not believe that a regulatory commission should be permitted to put a public utility company under its jurisdiction to the burden of protracted proof of the inventory of the company's property and its value, in a suit to which the commission is a party. Such a claim is a confession of non-performance of duty by the State regulatory tribunal, and the company should not be required to suffer through such a dereliction.

(*Continued on page* 454.)

Contractual Obligations of Utility Corporations Under Their Franchises

Rufus C. Dawes Clarifies a Delusion as to Validity of Contracts as to Rates That Has Generally Confused Public and Even Misled Utility Operators

In order to extricate our great business from the difficulties that surround it, it is necessary, first, for us to have a clear understanding of our situation, and then to be able to make the public understand it, declared Rufus C. Dawes, of Chicago, at the American Gas Association convention.

The public already understands that the high cost of labor, coal, oil and other materials results in the high cost of gas; but the public believes that, when a rate is prescribed in its franchise, a gas company is bound by a solemn contract to a fixed price. When a gas company applies for a higher rate, the public thinks it is demanding release from a contract obligation that has suddenly become burdensome, after having been highly profitable for several decades. Here, then, is an obstacle to the public understanding of our situation.

It is the duty of accountants to understand the business they record, and to make it understood by others, and it is in part the duty and a part of the duty of accountants to clear up this fundamental misunderstanding.

Far be it from us to ask exemption from the burdens of a contract! We have better employment than to submit, with a whine, reams of paper covered with gloomy figures in red ink, and to ask relief, by special concession, from our share of the common burden.

We keep the records of a great business employing nearly $4,000,000,000 of capital, supplying nearly 50,000,000 people in nearly 5,000 communities with an indispensable service. We submit true records and make just claims. The public must be made to understand this.

Sanctity of Contracts Basis of Business

The sanctity of contracts is the very basis of our business, as it is of all business. Believing this and remembering that the Federal Constitution declares that "no State shall pass any law impairing the obligation of contracts," we could hardly go to a public utility commission, or to a city council, to ask permission to violate one.

The essential methods of transacting commercial business are of great antiquity. But our business is a modern one. It was established less than 150 years ago. Its relation to its customers is unique in this, that it requires a public grant in order to serve them. In making the contract for such grants in the first instance, the public was extremely anxious to secure the service, the promoters were equally anxious to make a profit, and uncertain as to the rates required to produce it. Under such circumstances, the rates might be fixed, and were fixed, at figures much higher than could equitably be maintained after the business was fully developed. On the other hand, at the expiration of the period of the grant (assuming, as was by no means universal in the beginning, that the grant was limited in time) conditions were exactly reversed. The community was in the possession of the service; the company could not make profitable use of its equipment, except by continuing it. The rates fixed, under such circumstances, might have been, sometimes were, insufficient to produce a satisfactory return.

Very early the doctrine was announced that one generation could not, unless unmistakably authorized by the sovereign authority, rightfully bind all succeeding generations in the matter of rates to be paid for such service. It was regarded as right that arrangements, and even contracts, should be made to provide for the establishment of such service, but that the rates and charges imposed upon the service ought to be subject to revision. The right and power of a municipality to fix rates by contract in perpetuity, or beyond the period of a generation, was questioned in different States upon different grounds. But the ultimate answer was practically the same in all States.

Defines the Limits of Authority of Municipality

It is generally recognized that the power to fix rates is a Governmental power, belonging to the State, and is a part of its sovereignty, which is not lightly to be bartered or given away. It is, therefore, held that the power to make an unalterable contract as to rates must be granted clearly to a municipality or it does not exist. The power conferred upon a municipality to grant a franchise will authorize it to confer upon a utility the right to occupy the streets, but not the right to fix a rate that shall be unalterable. The State, in such a case, may step in and regulate whatever rates may be fixed, and by so doing is merely exercising a power which it always possessed and which it has never surrendered.

In some of the States the so-called franchise rights were granted directly by the State through the charter of the companies. The Peoples Gas Light & Coke Company, for instance, was authorized by the Legislature of the State of Illinois to lay its pipe within the city of Chicago, and to sell gas to the inhabitants thereof at a price of $3 per 1,000 cu. ft., and the city was forbidden to reduce this rate. And you are all familiar with the great multitude of franchises issued by cities in which prices were fixed in perpetuity, or for very long periods at rates very much in excess of those required by modern conditions. If such charters and such franchises were valid contracts as to rates, the obvious effect would be to leave the utility companies free to-day to fix practically any rate they pleased. I have no doubt that it was a sound interpretation of the law which held that such adjustments were not contractual as to rates, but that the State, in the exercise of its sovereign power, possessed the right to revise and regulate, or to designate an agency to revise and regulate them. But if the relationship ever was a contractual one between the companies and the public it was the public which violated the contract, and not the companies. If it was the original conception that the rela-

tionship was contractual as to rates, the conception was changed to meet the public interest, and not corporate convenience.

At any rate the conception of the law has been modified by judicial decisions so that in most States, there can be no contract that will remain binding as to the rates. Utility companies have been forced to accept this situation as law; their franchises or their charters are held to be valid, but the rates named in them (in many cases two or three times the prevailing rates) are not even to be taken into consideration in adjusting the future rates. At the time the charter was issued, the rates were reasonable and just, and therefore legal. To-day the same rate would be unreasonable and unjust, and therefore illegal. There is no question of evading or enforcing a contract.

Now I am aware that it is well understood that a State, in the absence of a Constitutional prohibition, may grant to a public utility a franchise which constitutes an unalterable contract. A State also may, unless prohibited by its constitution, confer upon a municipality the power to grant a franchise containing an unalterable contract as to rates. In either of the above cases, where the power to grant the franchise exists, the courts do not hesitate to uphold the franchise as a binding and unalterable contract, which may not be impaired. But this contract, in the last analysis, is a contract between the company and the State (the municipality acting merely as its agent); and the State, like any other party in a contract, may surrender its rights thereunder, and this is precisely what it does when it appoints a commission with power to regulate rates. This surrender becomes binding when the other party to the contract (the utility) accepts the surrender by submitting to the jurisdiction of the commission.

The fact that it is now settled beyond question (except in a few special cases) that the rates fixed in a franchise are not unalterable, but are subject to regulation by the State, is not due to the inability of the State to make or authorize such contracts, but to its having refrained from doing so. Experience has demonstrated the necessity of this course.

The business of selling gas consists essentially in the purchase of fuel in a solid form, and the sale of it in a gaseous form. To fix the price of fuel in its gaseous form for a period of many years, without regard to the cost of fuel in its solid form, would necessarily bring it about that the price would, at times, be higher and, at times, lower than what would be just and reasonable.

No coal operator would sell the product of his mine for a long period of years at a fixed price, regardless of fluctuating costs. He opens his mine and sells from year to year. When he cannot sell at a profit, he closes the mine and waits for a more favorable market.

The gas company, upon the other hand, has a very heavy investment, which must be kept in continuous use to meet a public necessity. It has in effect a monopoly in supplying service essential to the life, health and growth of a modern city. To fix an unalterable price for such a service, or one that is unalterable for a period of twenty years or fifty years, is to take a great risk of demanding an exorbitant price for the service at times, and at other times of subjecting the company supplying the service to hardships so great as to render it practically incapable of continuing the service.

Now this doctrine that the selling price of the products of public utility companies must, at all times, be just, reasonable and not confiscatory, and must be based upon the cost of delivering that service, was adopted after the slow realization of this further fact, namely, that the character of the service was quite as important as the price at which it was sold. If the product were sold at too low a price, it would be economically impossible to establish the credit necessary to improve the service.

At the same time that there was being gradually established this system of fixing the rate of selling the service of public utilities, it became recognized more and more that these public service companies were charged with affirmative duties, namely, to comply with all reasonable statutes, to serve all who apply, to provide safe and adequate facilities and to make no discriminations.

Now what the selling price of such service ought to be from year to year, what the company ought to be required to do in order to serve all who apply, what constitutes adequate facilities, and what results in discriminations injurious to the public, these, more or less independent problems, are not susceptible of solution in the hard and fast lines of an irrevocable contract. Justice can be established only by changing such matters, as and when conditions change. A contract is not changeable.

What Constitutes a Contract

A contract, generally speaking, is an agreement whereby one person for a consideration agrees to do or abstains from doing some *particular* thing. The act to be accomplished or the restraint to be imposed must have the sanction of law, and the consideration must also be a lawful one in order that either party may have a remedy against the other for the failure on the part of one to perform or of the other to pay the consideration. The sanctity of contract obligations is the very basis of all progress, materially and morally. Everything depends upon the enforcement of contracts. Therefore, the obligations of a contract must be clear and definite and not subject to a multitude of contingencies. The construction of an industrial plant and the prosecution of the enterprise rest upon the faithful fulfillment of contract obligations entered into by many people. The building and furnishing of a home, supplies of food and clothing to the family, the sales of all property, whether for a money consideration or in exchange for other property, the sale of one's labor, physical or mental—all the relations of employer and employee—are based upon contract, and upon the faithful fulfillment of the obligations of each party thereto the whole fabric of business and social life rests. In fact, payment of the consideration, if made by check, involves a further contract, both on the part of the drawer of the check, and provided it is honestly drawn, then upon the bank also, while if it is paid in currency, the money so paid is in most cases paper, evidencing a contract on the part of the Government itself to pay, either unsecured or secured by other contracts of payment. No one engaged in any business could disregard a contract obligation. Even the State could not.

Beginning with the celebrated "Dartmouth College Case," the Supreme Court of the United States invariably upheld the obligation of State contracts to be equally binding as contracts between individuals. But the rule was also adopted very early that where by the charter the legislature reserves the right to alter, amend

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Practically All Work Done in Garage Repair Shop that Requires Heat Can Be Done With Gas

Harry L. Wolfe Gives One Very Good Suggestion for the Mutual Profit of Garage and Gas Men, and Others Equally Pertinent

It is not a hard proposition to sell gas to the public garage once you have the knowledge of its proper uses and the theory of its application, declared Harry L. Wolfe, in a paper prepared for the recent annual convention of the American Gas Association. The repair man may have used gas in the larger cities and will be a booster for you, thereby helping the sale. If he has not used gas before he will appreciate your helpful assistance along the lines of safety, comfort, convenience and cleanliness and the proprietor will soon see that he can do work which may have been previously sent to the city or the same class of work in less time. The sooner all mechanics are trained to use gas the easier will be our battle against crude methods and crude fuels and we have found that the relative costs of fuels for these operations are not now considered as they have been in the past. The prime question now is labor and where you can do better work in less time in more comfortable surroundings; the differential fuel costs are put in the background.

Again it may be the case that the public garage is the only place in the town where gas may be sold in other domestic appliances. Should the only chance for industrial work be overlooked?

Where the Opportunities Lie

It is reasonable to assume that 75 per cent of the heat treatment about an automobile is done with gas, why then should we surrender our rights for business to other fuels after the car has reached the customer and repair man.

Among the many operations now performed by gas as a heating agent in the garage and repair shop are bending, welding, iron and aluminum, brazing, lead burning, distilling, vulcanizing, japanning, hot caustic solution tanks, etc. Thus it will be seen that gas may be used to advantage regardless of the size of your city and that gas salesmen may uphold their reputation of not overlooking anything in sight.

Japanning Automobile Parts

During the winter season or when the automobile is laid up the owner generally has it repaired and repainted. The hood, fenders, running board and wire wheels are given coatings of japan, the wheels being sprayed with white or cream enamel and baked at about 140 deg. Fahr. Extreme care is necessary in baking white enamel as overheating will turn the white to a dull cream or yellow. Here is when the gas-heated oven for japanning demonstrates its superiority, owing to ease of control of burner valves and draft. Once the proper baking temperature is ascertained it can be continuously performed without any variation.

Such extreme care is not necessary in baking the black japan on the other metal parts in the same oven, the temperature generally being about 450-500 deg. Fahr. Dust is the greatest enemy to proper work.

The oven cited was built by a local tinner out of twenty-gauge galvanized iron on the outside and black iron on the inside. The reason for this is that galvanized iron under heat may buckle or bend and throw off a scale which adheres to the japanned surface.

The walls are one inch apart and braced with 1-in. channel irons running vertically, being insulated between walls with asbestos fiber. The corners and roof supports are 2 by ⅛ in. angle iron and riveted. A loose trap-door is placed in the roof, being 24 in. square and between the two vents, hooks are placed in the ceiling to hang the work on for baking. This oven is 7 ft. high, 8 ft. wide and 8 in. deep, being heated by two atmospheric drilled pipe burners, size 1½ in., inserted from the front, and covered by a sheet metal baffle plate to distribute the heat evenly. It is of the direct-heat type, the temperature being easily controlled by the operator at all times. A mercury thermometer is placed in the door. The oven entrance and dipping tank are in the same enclosed room to insure perfect cleanliness.

The danger of explosion is hardly worthy of consideration, but it is good practice to have the top vents open into the flue at all times except when the baking is approaching completion. It is advisable to keep these vents open and after the oven is loaded and the gas lighted for about forty-five minutes or until all the volatile oils or explosive vapors generated have passed from the oven. Controlling levers connected to the shutoffs in the vent pipes should extend to the front of the oven within easy reach of the operator and bent in such a manner that positive knowledge is had of the position of the internal damper.

Extreme care must be had that no down draft or back draft is in the oven at any time. This would blow dust back from the flue and spoil the work and likely cause an explosion should one burner cease burning temporarily and relight from the other.

This installation has been passed on by a rigid State Insurance Inspection Board and pronounced safe.

There are several reliable oven concerns who can supply oven for japanning of almost any size desired and where possible it is advisable to sell the manufactured oven complete ready for use. There is no real necessity, however, for an indirect heated oven. The gas oven cited takes care of all the work done in this repair shop and the gas consumption averages about 8,000 cu. ft. per month.

Brazing—Bending—Preheating

One of the most convenient appliances that can be provided the repair expert is a one-inch, blast torch as shown in the illustration. This appliance has a very wide range of uses and it may not be amiss to outline a few of the operations to which it has been put successfully.

In straightening bent frames of automobiles and trucks it is extremely convenient. The damaged part is surrounded by brick and the torch applied. When

heated up the hammer is used and the frame is readily straightened up.

When it becomes necessary to dismantle the differential gear housing or to remove the drive shaft housing both of which are brazed on with brass spelter the torch is again used and the parts are sweated off. If riveted also the rivets are cut later. The operation is reversed upon assembly again.

Industrial gas appliance dealers supply these torches and mixing or suction tees for less than $25.

Welding Aluminum Castings

There are various methods used to solder and weld aluminum, all of which require extreme care and attention, as it has been observed that aluminum oxidizes very rapidly when being melted.

For the purposes of this article we will consider only the process of welding broken parts of aluminum castings together which may become necessary in the public garage with the brazing torch. The fractures should be first cleaned thoroughly with clean gasoline or benzine. They are then brought as closely together as possible. A mould of plaster of Paris should be made up about one inch in thickness under the broken parts and allowed to extend up around the sides of the pieces to hold the melted metal. This then must be thoroughly dry before proceeding. A flux of paraffin wax can be used to prevent oxidization, but is not absolutely necessary. Small clean pieces of aluminum are fused into the fracture or aluminum solder may be used which when cooled can be smoothed off, making a perfect joint.

We are considering the welding of broken crank cases, particularly as these form the bulk of this class of work. Very often the lip or corner support becomes broken off and the practice has been to use an acetylene-oxygen torch for repairs. This costs at least ten times as much as the gas torch operation and does not make as good a job. In one instance the broken parts were sent out to a professional welder who charged $7 for the job. We subsequently duplicated this operation for a total cost of 40 cents with the gas brazing torch as described above.

Aluminum expands and contracts very rapidly. It is, therefore, essential that the entire piece be preheated with the torch. After it is thoroughly heated up the torch flame should not be removed from the spot, being welded until the metal has melted and settled into place, thereby avoiding any possibility of oxidization. The piece can then be kept warm, allowing a slow contraction adjacent to the fracture. This insures a firm joint.

Cleaning Motor Blocks, Gears, Tools, Etc.

A very common practice in the garage and repair shop is to take a bucket or pan of gasoline and a brush to clean greasy parts of motors and it does the work very well.

Here is one of the best chances the gas salesman has to show service and efficiency.

The gasoline process is necessarily very slow work for a high-priced mechanic and very dangerous, giving off explosive vapors. It is also exceedingly wasteful.

Take a caustic tank which holds 100 gal. working capacity of water into which "Oakite" or caustic soda has been placed. This is heated by an atmospheric gas burner and kept at a scalding temperature. The greasy parts are put in a wire basket if small, or if a motor block, it is plunged up and down a few times. This removes all grease and foreign matter very quickly and there is enough heat in the iron to dry in quickly and without rusting. The typical tank is six feet long by two feet wide by two feet deep and is in the workshop, no insurance barriers being placed against it.

No garage or repair shop should be without this appliance which will quickly pay for itself in saving labor and gasoline.

Several reliable appliance concerns manufacture this type of appliance, or it can be built locally of sheet metal and lined with quarter-inch asbestos mill board. A two-inch drilled pipe burner extends full length under the center of tank and a perforated false bottom is used to catch a spark should one drop. A tank of this type sells for about $200 and consumes 350 cu. ft. of gas per hour.

Lead Burning

This operation is being done very generally now by using artificial gas and oxygen at a much lower cost and with less danger than with acetylene or "Presto" light. The Oxweld Company makes an appliance for this purpose.

There is very little work done in a garage repair shop that requires heat that cannot be done with gas and as the industrial prospects are limited in the smaller cities and towns it pays to investigate these propositions. You will be surprised to find the amount of work that is being done with fuels other than gas and that can be supplanted by gas with a little diligent effort.

The Use of Bituminous Coal as Water Gas Generator Fuel

It has long been recognized that coke is a more desirable fuel than bituminous coal in water gas apparatus of present design, but still much headway has been made in the use of the latter fuel as a substitute for coke. This is particularly true in the Central States where the supply of high-grade coke has been very limited and uncertain during the past few years, and where coking coals of low sulphur content were available in quantities. In fact, with the present difference in price of coal and coke, it is possible to realize a marked saving when using a coking bituminous coal as generator fuel.

Difficulties have been encountered in the use of such fuel, but they have, to a large extent, been overcome. One of the chief obstacles in the use of the more general utilization of bituminous coal for water gas manufacture is the fact that, *with normal operation*, the capacity per unit of time is reduced. This, of course, is a serious problem for plants operating at capacity with coke fuel. However, this difficulty can, to a large extent, be remedied by a changed method of operating, and can be entirely remedied by a combination of the latter with a change in the design (or proportions) of a water gas set. The preceding statement, the reader will understand, refers more particularly to a carburetted water gas set.

In the manufacture of water gas from coke, present practice requires that for continuous twenty-four-hour service the heat of combustion of all the carbon monoxide (CO) generated during the air blow be utilized in addition to the sensible heat of the gas coming from the

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As the Journal Views It

A New Viewpoint

It takes a lot of coal to operate an ordinary size gas plant. And not only is coal high in price, but it seems almost as elusive as the rainbow's pot of gold when one goes out to get it.

Oil is so high in price, is so scarce and the future ahead as to its being economically available for gas manufacture is so dismal that gas men have already determined that they must practically junk equipments to the value of immense sums of money to eliminate its needs. But this cannot be done in the complete sense until far in the distant future. Today the gas industry cannot find the great sums of money necessary to help it save money on the oil extravagance.

Some rates have been raised, but not by any means all that should have been raised. And even with the fortunate ones a good many months must pass before their increased rates can get them back financially to even approximately the plane they occupied before the war emergency hit them.

These are most distressing times in the gas industry.

Yet the gas man by and large is cheerful.

There is a new tingle in the air. The skies are dark, but the clouds unmistakably are breaking.

The gas man does not see ahead merely easy going. He sees even prosperity—a big era of expansion in the industry.

He has real facts, not alone hopes and theories, to support his confidence.

This change in viewpoint has been inevitable since the beginning. The gas industry is not near the end of its tether by a good many years. It is

but approaching its maturity. Its greatest life is still ahead.

Gas has too many predominating merits as a fuel for too great a diversity of uses to be permitted to die out and be forgotten.

No Sign of Relief in the Motor Fuel Demand

Recent reports indicate that those who are heavily invested in motor car industries have no fear whatever that the heyday of their business is forever past.

Just now pleasure cars particularly are not selling as fast as by dint of maximum exertion they can be turned out. But there is general confidence that this is a temporary flurry. Sooner or later a burst of buying is expected that will rival or exceed anything that has been known in the past.

And motor cars once made have a habit of enduring over many years. Our ultra-exclusive, it is true, feels it is time to change cars when the gloss gets off the paint. But the more sagacious one who has the saner view that the car is a car until the parts that make it go give out is always there to keep the old car going.

The fuel supply has been hard set to keep up with the demands that have been made. How it will fare with the demands to come is problematical.

There must be an adequate supply of motor fuel. Even thirty-five-cent gasoline, it has been demonstrated, has not attained the prohibitive point—not even the discouraging point—of liberal consumption.

The oil interests *feel* that there will always be oil. They give no supporting proofs, however, nor can anyone—the future demand is too highly problematical.

For those who are possible producers of motor fuel surely the handwriting on the wall should seem most clear. The future promises perhaps a profitable market. It is worth their while at least to prepare to enter it when the proper moment should come.

The Real Aspect as to Rates

Rufus C. Dawes in his American Gas Association paper dealing with the contract obligations of utility companies as to rates has rendered a real service to the gas industry.

To this day the public in general is under the impression that through promising to supply gas at certain rates the utility company obtained its original privilege to do its gas business using city streets.

That these original rates, the consideration the gas company offered in return for the privileges the city granted it, have been changed since, perhaps many times, despite the gas company's attempt to establish a contract, is known to gas men generally —to some of them to their bitter disappointment. But the public, accepting decreases, did not trouble itself to inquire into the wherebys or whyfors. To the public quite generally until very recently gas companies seeking increases were viewed in the light of contract dodgers.

No one admires the type that seeks to avoid taking its medicine when its agreements do not result in seventy-five per cent advantage to itself and twenty-five to the other party.

And gas companies have been put in this unenviable light simply because of a basic misunderstanding. If the old franchise rates had been a contract there would be few gas companies to-day which would not be reveling in comparative prosperity.

Mr. Dawes has succeeded in explaining the situation so clearly that every gas man should be able to understand it better than he ever has before, and, in turn, be better able to make it clear to his public.

Gas companies seeking higher rates are not contract jumpers. The original readjustment in the understanding as to rate scales being a contract was brought about by the public's part and to the gas company's distaste.

Contractual Obligations of Utility Corporations Under Their Franchises

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or repeal, then no contract obligation is impaired by an alteration, amendment or repeal, because such action is in accordance with the contract and not hostile to it. In the same way, where by the constitution of the State or by its general laws in force when the charter was granted, it is provided that all charters shall be subject to legislative control and alteration, this provision in legal effect becomes a part of the charter, and therefore a part of the contract. Many owners of public utilities adversely affected by changes in their rates for their service considered such action a violation of a contract obligation. An analysis of the situation, however, discloses that there is at present no deviation from an established line of legal principles, but that such changes in rates are legally justified either under the reserve power to alter or amend, or on the ground that no contract, properly and legally speaking, was ever made.

Such is the law, and it was upon this theory of law that public utility commissions were established as the agency to adjust rates upon the basis of reasonableness and justice, both to the utility and the public. The creation of such an agency was a denial upon the part of the State of the validity of franchise agreements as to rates. Utility companies appealed to the courts, claiming that the rates fixed in franchises constituted contracts which were not subject to alteration. The courts quite uniformerly held to the contrary. So long as the activity of commissions tended to reduce rates, there was no protest, but now that the exigencies of the situation require revision upward, there is a tendency on the part of the public to assert the validity of franchise contracts as to rates. The public ought to be made to understand that these companies are not seeking exemption from the burdens of a contract, but, on the contrary, have been denied the advantages of what they had supposed to be

contracts, but which, as a matter of law, were held not to be contracts. The companies have been obliged to resort to some designated agency of the State, because of the fact that the power of contract with respect to rates has been denied to them.

The old idea, that the rates at which the service of these public utility companies should be rendered is a matter that should be controlled by rigid contract for a period of many years, is one that has been tried and found wanting. It has failed. It cannot be restored by advocates of "Home rule." They cannot use the sentiment that attaches to that phrase to revive an antiquated device which has utterly failed in practice.

Nevertheless, they can confuse the public mind, and I think they have done so. For, I think, I have given a correct statement of the fundamental relationship of our companies to the public, although a lawyer might have made it more accurately, and perhaps more clearly. And I am sure the public doesn't realize this situation. I have sometimes thought that very few of us who are well acquainted with the business have realized it.

In these days an accountant must understand something about the work of the engineers and of the lawyers and of the financiers, who co-operate with him in explaining to the representatives of the public the situation in which these companies are placed.

Perhaps no two companies stand in precisely the same relationship to their public. But nearly all of them are under essentially the same limitations. It is the duty of the accountant to explain the condition of his company to the public utility commission.

He cannot fully explain the situation without explaining this limitation of its right and this necessity of submitting its demands from time to time. Every company ought to endeavor to make its public understand why it is obliged to submit its application to a utility commission. The public will understand that if the company possesses the right to contract as to rates, the public utility commission cannot possess the power to regulate its rates. The public knows that if the commission has the power to regulate the rates, it necessarily follows that the companies have no right to contract as to rates. But they will not realize it unless it is called to their attention.

The public utility commissioners very frequently chide public utility companies, and enjoin upon them the duty of informing the public. We ought to do everything in our power to comply with this demand, for these public utility commissions are responsible to the public, and responsive to public sentiment.

Almost Impossible for Body of Public Officials to Offend Public Opinion

It is almost impossible for a body of public officials to offend public opinion. When they have the courage to do this, there is danger that political conditions will force their resignations, or bring about the repeal of the law. In all other respects the public understands and appreciates, better to-day than ever before, the burden that is being carried by these utility companies, and the necessity of sustaining hem, but the public, deceived by meddling politicians, still believes that these companies are held by a franchise contract to rigid rates, and that public utility commissions, when they advance these rates, are releasing the company from such contracts. The commissions would be much more free to render just and equitable decisions if the companies could only make the general public understand the exact nature of existing obligations.

Too long have arguments been made on behalf of utility companies worded exactly as if the appeal were for permission to escape the burdens of a contract. The facts sustain a demand for higher rates, but do not justify an infraction of contractual obligation. The public resents the idea, too often inferable, that the company pleads for release from an acknowledged obligation. No utility company ought to ask any such thing and all of them ought to make it clear to the public that they are not asking it. The case will then be clarified of prejudicial misunderstanding. The essential facts will receive more careful consideration, and the rate-making bodies will be more free to render their decisions upon a basis of justice and equity.

The public utility commissioners in their findings can make clear the necessity for increased rates, but it is the duty of the companies, themselves, to make clear to the public the fact that they are entitled, at all times, to a just and reasonable rate, by reason of the fact that they have been deprived, by law, of the right to contract as to rates.

European Influences Affect Gas Industry in Other Parts of the World

(*Continued from page* 442.)

clined also to introduce European equipment in their own home countries. Europe has not only exported equipment but also has always done a considerable export trade in brains. There are thousands of European gas men in employments outside Europe, and each of them naturally supports the industry of his own country of birth in the matter of giving orders. There is further that matter of the technical press. It is blamed by American editors upon the European technical press that it is not practical enough and gives scientific theoretical research too large a space. What has proven an obstacle to the distribution of the European technical press in the United States is its largest asset in other countries. Gas men in South America, Asia, Africa and elsewhere are reading the European gas magazines because they contain scientific articles. It is for them the only means to keep in touch with technical progress, because they have no gas institute or gas association where they can discuss problems of their industry with their colleagues. The more technical a magazine, the better is it for the non-European gas men. And while he reads the articles he cannot omit to read also the advertisements. The carrying power of the advertising pages of the European gas press, therefore, exceeds the boundaries of the domestic market. How true this is can be easily seen by our own experience. During the war our own technical press has increased its foreign circulation considerably, mostly because European papers are not available. Immediately the pulling power of the advertisements of our journals increased in proportion to the growth of their foreign circulation. This feature of our own press now will continue because, having once been introduced into the offices of non-American gas engineers, it will be retained and our gas-equipment industry will get the benefit of this increase in the circulation of the press.

The European influence upon the gas industry of the world is entirely broken by the war. It will return again. But while the war lasted an American influence

has been set up that will counteract, in part at least, the European brand. This merely moral influence has now been supported more effectively also by an emigration of American capital. It is no coincidence that sales of gas engines to Peru have increased very rapidly during the last year or that a larger number of gas engines were sold to Chile during the year 1918 than during 1919. In each case the connection can be traced between the orders for gas-making equipment and the investment of American capital in industrial enterprises, especially mining, in these countries. The American engineers taking up work in these American-conducted enterprises have the same sentiments as have their European colleagues. They have learned their profession in American firms, where they have become conversant with American equipment, and naturally they will prefer to work with machinery that is known to them. The orders for this equipment are mostly placed by the head offices which are located in New York and it is easier for these to deal with American manufacturers than with foreign.

This gives a certain superiority to the American equipment which of course will continue to act in its favor as long as the companies in question are controlled by American capital. The export of capital, therefore, will be of interest to our American gas-equipment industry and should be supported as much as the export of brains, which goes with it hand in hand. American engineers and American capital will always favor American equipment. But there is still one other point that deserves mentioning. The introduction of American equipment in American controlled enterprises gives non-American engineers a chance of studying the working performance of American equipment under actual conditions. If these men find American equipment doing well, they will be influenced in their future selection in favor of American engines. The scale will not turn any more against American equipment as readily as it has done in the past. American equipment at least will get an even chance with European, when new orders have to be placed. This is a great deal won and will no doubt exert its influence during the coming year in an increasing manner.

The Use of Bituminous Coal as Water Gas Generator Fuel

(*Continued from page* 450.)

generator. This is doubly true when making carburetted water gas from bituminous coking coal. The reasons why this is so are apparent when the following factors are considered.

The average value of the blue gas from coke fuel is 300 B.t.u. per cubic foot, whereas that from the coal is 335 B.t.u. Also the volume and quality of the blast gas is appreciably greater when the latter fuel is used. In other words, when making carburetted gas from bituminous coal the quality of the blue gas is so much richer than the same gas from coke, that less oil is required to carburet it to a given standard. Therefore, less heat is required for heating the checker chambers. This condition is aggravated by the fact that more and richer blast gas is available than ever, and must be wasted at the stack in large quantities when making gas to a standard lower than 565 B.t.u. The lower this standard the greater the quantity of blast gas wasted. Therefore, with the present tendency toward lower standards for city gas, the benefits to be realized by the utilization of a waste heat boiler are at once apparent.

The general practice in the past in the use of waste heat boilers has been to utilize only the sensible heat of the gas, no consideration being given to the heat of combustion of the excess combustible blast gas. This is perhaps due to the fact that when making carbureted gas to a 600 B.t.u. standard or better, using coke fuel, there is but little combustible gas wasted, since more oil is used per 1,000 cu. ft. of gas and the percentage of blue gas in the finished gas is lower. The changes brought about by the use of bituminous coal as generator fuel and by the lower gas standard, materially alters this condition and makes it particularly desirable to supply a combustion chamber in conjunction with a waste heat boiler for utilizing the heat of combustion of the waste blast gas.

In drawing attention to the use of bituminous coal as generator fuel, it is not my purpose to claim that it is better fuel than coke but to point out that:

1. Carburetted gas can be made from it cheaper than with coke, due to the fact that although slightly more generator fuel is used per 1,000 cu. ft. of gas produced, the difference in the prices of coal and coke is great enough to offset this difference. Also, the oil consumption per 1,000 cu. ft. is less, due to the higher heating value of the blue gas from coal fuel.

2. A still greater economy can be realized, from the use of such fuel (bituminous coking coal) when a properly designed waste heat boiler with a suitable combustion chamber is provided.

The Bureau of Mines in its investigations of the use of central bituminous coals as water gas generator fuel, conducted at its mining experiment station at Urbana, Ill., has made a special study of the design of types of water gas sets using coal. A report on the results of the study of this problem, entitled "Water Gas Apparatus Designed for Use with Bituminous Coal as Generator Fuel," by Wm. W. Odell, has just been completed, and will appear as a Bureau of Mines publication. Another paper to be published by the bureau that may be of interest to those concerned in the manufacure of carburetted water gas, is a report of experiments made during July and August, 1920, in the use of mixed fuels, coal and coke, on a commercial scale (making over 1,000,000 cu. ft. of gas a day).

Status of Private Property and the Future of Individual Enterprise Now Being Fought Out in Numerous Courtrooms

(*Continued from page* 446.)

For my own part, I believe that each such commission should consider itself charged with the duty being able at any time to say, without a week's delay, what property a public utility company under its jurisdiction owns and uses, what such property cost the company, and what is its present value. The company, its investors and the consuming public are entitled alike to have readily and promptly the benefits of such a performance of duty by the regulatory tribunal, subject always to the right of resort to the courts for the correction of errors by the commission as to the bases of such appraisal of value and computation of investment. A public service commission ought to be able to say in ten minutes the amount and value of the property a utility has and uses in

the public service. This would obviate a large part of the expense and delay commonly met with.

As to the bases of calculating present value, I am personally inclined, taking into account the range of prices and conditions and the years as they come and go, to stress the element of the company's unimpaired investment. A company is *at least* entitled to be assured a return on the sums its investors have put into the enterprise and have not received back as a repayment of capital. The bases of sound rate making are, I think, clear, and their practical application needs to be defined and insisted upon. The rate chargeable by a railroad or utility should be adequate:

1. To defray all operating expenses; the cost of the service.

2. To provide, as a part of the operating costs, for the maintaining of the system and property in good condition, furnish renewals and replacements, and cover the diminution of capital account through property withdrawn from service—thus keeping the property in first-class operating condition and the *quantum* of investment unimpaired.

3. Over and above these current costs, to yield the investor a reasonable rate of return upon his property investment in the enterprise—his unimpaired investment—so that what he put into the project may remain in it and his rights to earn a return upon all of it may continue, in the absence of some ultimate liquidation. Until the investor gets his money back from the enterprise in some form other than that of the payment to him of the annual return he must be regarded as entitled to receive a return calculated upon his aggregate outlay—what he is out of pocket because his money is in this enterprise—and no countenance can be given to the concept that his investment is *less* merely because it has continued to serve the public for some years. No man's investment is progressively destroyed by his receiving from year to year a payment representing a return on the investment. Nor does its duration affect its amount adversely. The *principal* of the money he has loaned to the enterprise is not extinguished or pared down by perennial payments of a return thereon. The right to earn a return on the full *quantum* of the investment continues until the investment itself is liquidated or repaid.

Under present-day operating conditions and with the broad powers of the regulatory commissions over plant and equipment, the endeavors of the executives of a railway or public utility enterprise are to maintain it in 100 per cent operating condition, and to make repairs, replacements and renewals whenever advisable to that end. This is done as a current charge out of operating expenses, and the plant is thus continuously renewing itself. Particular parts of units may wear or break; units may become inadequate or obsolete; but *the plant goes on*, and is kept abreast of operating needs, and has virtually the same, and often even greater, productivity and efficiency years after its operation began and years after the process of continuing renewal, repair and replacement began. The integrity of the capital investment is thus maintained, and the plant itself is kept physically good to the extent practicable or economically possible. Looking at the plant or railway system at any given time, certain outlays would be found necessary to make the plant or system 100 per cent physically good—things which would be done in the ordinary course of repairs and renewals, and things which it would hardly pay to do, because the conditions to be repaired are so casual and inconsequential as not to detract from operating efficiency. The full investment remains in the property, however, and the investor is entitled to a return upon the full amount thereof until his investment has been repaid him.

In order to feel assurred of a square deal, the investor needs to know, with considerable certainty, the capital sum upon which a return will be computed, in any rate-revision by public authority. He needs to know that the company will be allowed to earn a fair rate on the capital put in by him until such time as that capital is returned to him. There is no need now for uncertainty or indefiniteness about these bases of action. For years the railroads and the utilities have been subjected to accounting systems under which outlays are fully recorded, capital accounts are closely scrutinized, units and quantities and prices are known, and authentic data is available for the basis of sound and just action in rate matters.

In this connection I wish strongly to call to your attention the opinion of Special Master A. S. Gilbert in the New York & Queens Gas Company case, which has within the present week been approved and followed by Judge Mayer in the United States District Court in granting a permanent injunction to the company. The learned special master said:

"In determining that the complainant's property has a fair present value of at least the amount of the complainant's actual investment herein, . . . I have made no deduction for what is termed 'depreciation,' in whatever way calculated. Under any basis of determining present value, the complainant's property is now worth at least the amount of such investment therein, and the sound rule of law and policy seems to require the allowance of a reasonable return upon at least that sum.

"Upon the present trial it was insistently urged upon me by some of the defendants that there should be deducted from the cost of the property (irrespective of whether 'original,' 'pre-war,' or 'present reproduction' cost be under consideration) an amount claimed to represent so-called 'accrued theoretical depreciation,' based upon an assumption of 'life expectancy' for a gas plant and equipment and the estimated or known number of years since the same was erected or installed. From the testimony given upon the trial, I was strongly impressed that in respect of a very large proportion of gas property there is no ascertainable 'life expectancy.' The withdrawal of such property from service comes about from inadequacy or obsolescence which cannot be forecast in terms of years or even satisfactorily guessed at. Certain parts of operating machinery and equipment are, of course, subject to the effects of use. The replacement of these wearing parts enters into the cost of repairs. As to substantial units of structures, apparatus, mains and equipment, their withdrawal from the property accounts comes about from causes not attributable to the condition of the property itself or any diminution in its operating efficiency, but varying utterly with the particular plant, time, local conditions and service demands, and hence capable of being forecast only as the occasion for such change in plant or equipment becomes imminent.

"In other words, in order to keep abreast of improvements in the art of making and distributing gas when and as it becomes economically advantageous to do so, and to meet the growing demand of the public for service more adequately and economically than would be

possible through merely making additions and extensions to existing plant and equipment, larger or better and more economical and efficient units of plant and equipment are from time to time installed, to take the place of units which still are operating as efficiently as when first installed. The loss due to such supersession cannot properly be said to have accrued during the period the superseded unit was in service. It *occurred* when supersession took place. It became a proper charge against the economies to be realized therefrom. It furnished no basis for the imposition of an additional charge against the user of the superseded unit during the period of its useful service over and above the higher cost of operating it. Such a charge could not be justified either on the ground that the unit was losing potential life or that the capital invested in it was being consumed, because neither is true.

"In order to justify the deduction of 'theoretical depreciation,' I was asked in this case to *assume* that a 'depreciation reserve' equal to the computed 'theoretical depreciation' had been collected from the public, and then to deduct from the company's investment the amount of such assumed reserve. No such reserve had, in fact, been collected or accumulated by this company. The rate chargeable did not permit it, and there is no reason to believe that the Legislature, in prescribing the rate, ever contemplated it. As I have set forth in findings Nos. 32 and 28 of my report, and as I have elsewhere indicated herein, the complainant gas company has maintained its property and investment intact in the past, through renewals and replacements, at an average actual cost of approximately 3 cents per thousand cubic feet of gas sold, and no reason appears for believing that it cannot continue to do so on that basis. Even assuming that the statute permitted such a rate, to have imposed on the company's consumers an additional burden nearly twice as great, representing a purely theoretical item of operating cost, merely to accumulate a useless reserve to justify a drastic deduction from investment in some ultimate proceeding as to rates, could not have been justified on any sound theory in the past and cannot now be sustained as to the future.

"In order to justify the assumption that a 'depreciation reserve' was or should have been collected, defendants' witness Hine testified in this case that such a reserve was necessary 'so that when the property is retired for any cause whatsoever the fund can be charged with the cost of the property.' He testified also that the reserve should be in his opinion 'invested in the property,' and that when the funds were needed for renewals and replacements they would be provided 'by issuing securities against construction work which had been done originally out of this fund, for the money laid aside for this fund, just to reimburse the treasury on account of these expenditures.' This view seemed to me to disregard the obvious fact that having deducted the amount of the reserve temporarily invested in property from that on which he proposed the company should be allowed to earn a return, he, to all intents and purposes, destroyed the earning power of such property and investment; that therefore he could not issue any securities against such property, there being no earnings therefrom with which to pay interest on the securities; that the reserve could never thereafter be availed of for the purpose for which it was alleged to have been created, and that it would be in fact as if it had never been created. Thus he not only failed to sustain his contention that a 'depreciation reserve' was necessary for the purposes which he alleged, but he proposed to treat the reserve as if he himself believed it to be both unnecessary and ineffectual, except for the purpose of justifying a deduction from the complainant's investment.

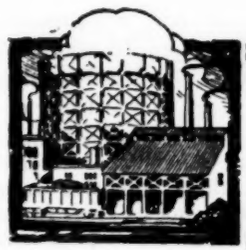
"It is obvious that the collection of an unnecessary reserve and its periodic deduction from the value of the property in service would operate to effect a piecemeal purchase on the part of the public of the property used by the utility in its service. In other words, it is really *asking the consumer to pay for the plant, instead of paying a return on the investment.* If such a consummation is desirable, of which there is no evidence, it should be effected openly, and not surreptitiously under the guise of providing for so-called 'theoretical depreciation.'

Your president has asked me, in concluding, to say a few words concerning the after-the-war attitude of the utilities in their public relationship. I speak only a personal view, with which you may not find yourself in agreement.

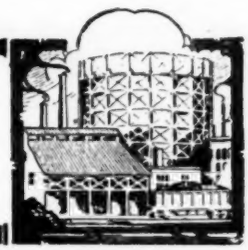
1. In the readjustment of gas rates which is taking place and is certain to continue for several years, I believe that the executives of the gas industry ought to strive insistently to be rid both of the fixed statutory rate and the uniform or "flat" rate. I regard these as the twin evils of the gas industry. Just now the "flat" rate stands in the way of the great natural development of the gas industry—the industrial business. I do not believe the gas industry will be on a sound basis until its rate structure has been made to correspond more nearly with that obtaining in the electric industry. The "service charge" or "consumer charge" is the first and soundest step. It should be introduced and insisted on everywhere.

2. *The rate* is the thing, and I believe the gas industry, in this period of readjustment, ought to "keep its eye on the ball." The slogan should be, *"An adequate rate for an adequate service."* Let the public say what quality of gas it wishes, provided the public is willing to pay its cost. Personally I believe the 22-c.p. standard is wasteful of oil and uneconomical in results, but if the public wants it and will pay for it, furnish it. The agitation for riddance from the candle-power standard should come from the public, not the companies. The public bodies will ask the advice of company engineers soon enough, if the impression does not prevail that the company is trying to "put something over."

3. *Study* your rate figures; make them up on a *sound* basis; do not countenance the claims of the "professional depreciationists," even for the sake of showing a few cents more per thousand of so-called operating costs. Be sure that your rate figures are made up on a *sound* basis; be sure that your *tax-report* figures are made up on a basis consonant with your claims in rate litigation. I have seen companies do enormous potential harm to their rights in rate litigation, merely to save a few hundred or thousand dollars on taxes. Be prepared at all times to justify the rates you are charging, and stand insistently for a rate which reflects precisely your present costs of operation plus a return on investment adequate in rate to attract new capital, facing at all times the fact that conditions may change and that rates should go up or down flexibly as conditions change.



NEWS OF THE GAS INDUSTRY



South Central Gas Association Holds Successful Meeting at San Antonio

Constructive Program and Delightful Entertainment Feature Three Day Convention

By S. J. BALLINGER

The fifth annual convention of the South Central Gas Association was held at the St. Anthony Hotel in San Antonio, Oct. 12, 13 and 14. The largest attendance during the history of the association was recorded and a highly interesting and diversified program was presented by the committee in charge of arrangements. During the past year the membership of the association has almost doubled, and the enthusiasm and interest manifested point to a real awakening among the gas men of this section.

President's Address Sounds Note of Encouragement

The keynote speech delivered by President Paul E. Nicholls of Galveston pointed the road to better days for the gas men through united and persistent action. He stated that the question of rates, labor, fuel, were the three important matters confronting the gas industry. Taking the first in order, he urged early consideration and readjustment of gas rates, and predicted that the three-part rate as now used, or in some revised form, must eventually become universal if equitable rates are to obtain.

In reviewing the fuel situation, Nicholls pointed out that an enormous amount of gas oil was being wasted annually in manufacturing a 600 B.t.u. standard gas, when it has been conclusively proven that gas of lower caloric value is equally as efficient, and recommended that serious consideration be given the idea of modifying our present standards. He stated that legislation would be required to remedy this condition. Referring further to this subject, he said, "Fuel conservation is a natural slogan to-day. This opens up a great field of opportunity for gas companies for the industry will have done its duty in conserving fuel only when the burning of coal as such is unheard of. Hundreds of thousands of tons of coal are wasted annually by being burned in inefficient domestic and industrial appliances, which could be replaced by efficient gas-burning equipment to the mutual advantage of the gas companies and the consumers. The education of the public to the gas-burning idea is being made easy by the increased prices of solid fuel and the market advance in the cost of labor which is necessary to handle such fuel. Automatic controls on gas equipped appliances practically eliminate the labor item. We would do well to make the most of this great opportunity of gas as an industrial fuel."

Closer co-operation between employer and employee was urged by the president, not only as a means of combating radical tendencies, but to increase working efficiency and contentment among the workers. "New blood must be drafted into our industry," said Mr. Nicholls, "and the gas business must be made more attractive to the ambitious young man. Insufficient gas rates, political domination, fuel troubles, labor troubles, financial troubles and just plain troubles are all that one hears when one makes inquiries concerning the gas business. But fundamentally it is as sound as the nation."

In conclusion Mr. Nicholls called attention to legislation now pending creating a Public Utilities Commission in the State of Texas. He thought the association should endorse commission regulation and get squarely behind the proposed enactment.

More Pep Needed

S. J. Ballinger, advertising and commercial manager of the San Antonio Public Service Company, in a snappy service talk, entitled "Putting It Over," urged the gas men to shed their cloaks of dormancy and get into step with their electrical brothers who are making rapid strides forward. He emphasized the necessity of better merchandising methods and more efficient gas consuming devices and urged closer co-operation at home and with the American Gas Association and in line with the opening address stated that the uniform meter rate was a relic of antiquity that should be promptly relegated to the scrap pile.

Mr. Ballinger stated that the sale of non-vented gas heaters for house heating was acting as a boomerang because they were not sold and used strictly as chill chasers, adding that when gas heaters are intended for permanent heating purposes during long periods they should be always vented. In our Southern States, he stated, this heating business is too often being handled at a loss, due to our insistency on maintenance of a uniform meter rate.

He urged the necessity of publicity and good-will advertising—not spasmodic efforts but steady persistent hammering, and stated that the real foundation of good-will advertising must be created within the organization.

Non-Vented Water Heaters

One of the most interesting subjects presented was brought out in a paper by Dr. P. E. Shoch of Texas University, under the title of "Gas Combustion." Dr. Shoch analyzed hazards connected with the operation of non-vented water heaters and the uncertainty of the dangers of these heaters, due to various conditions affecting the combustion of the gas. Most of the information given out was based upon actual experience gained through experiments made for the purpose of furnishing expert

testimony. It was pointed out that the same water heater operating under apparently the same conditions would at times produce fatal results. The uncertainty being due in general to the following cases:

1. Rate of flow of water.
2. Rate of flow of gas.
3. Obstruction caused by water flowing through the heater to the passing of the gas.
4. Amount of condensation formed in room where heater is burned and its effect upon the production of carbon monoxide.

Dr. Shoch also gave some interesting figures regarding the percentage of carbon monoxide that would produce fatal results, when liberated in a given space. This paper and the discussion that followed is of particular interest and concern to the entire industry and will be printed in pamphlet form for distribution. It contains many new thoughts and angles of the same and will be a distinct contribution to gas literature.

The American Gas Association and U. S. Government Are Represented

Oscar H. Fogg represented the American Gas Association at the convention and made an appeal for a united gas industry. He stated that there was never a greater need for closer communion and co-operation among gas men. He described in detail the work of the A. G. A. together with their plans for the future.

E. G. Seivers, Division of Resources, Department of the Interior, made a very comprehensive survey of the natural gas industry, supplementing his talk by interesting data in the form of lantern slides, all of which will be available for distribution.

Must Have Reasonable Return

Dr. M. P. Cullinan, president of the Border Gas Company, Laredo, Texas, felt that the natural gas industry was slowly killing itself and urged intelligent thought and application in order that the business might be put on a paying, dignified, basis. He pointed out the difficulty of obtaining money under present conditions, which he thought was lack of knowledge on the part of the investor and to our own unbusinesslike methods. "Until such time as the domestic consumer appreciates and is willing to pay for the gas, we should be less profligate in throwing our own and our stockholders' money in city service lines, meters, etc., instead we should sell our product where it will bring at least a reasonable return on money invested. The gas, like the traveler pigeon and the buffalo, will soon be a memory only. Why prolong indefinitely a steadily failing industry?" said the Laredo man.

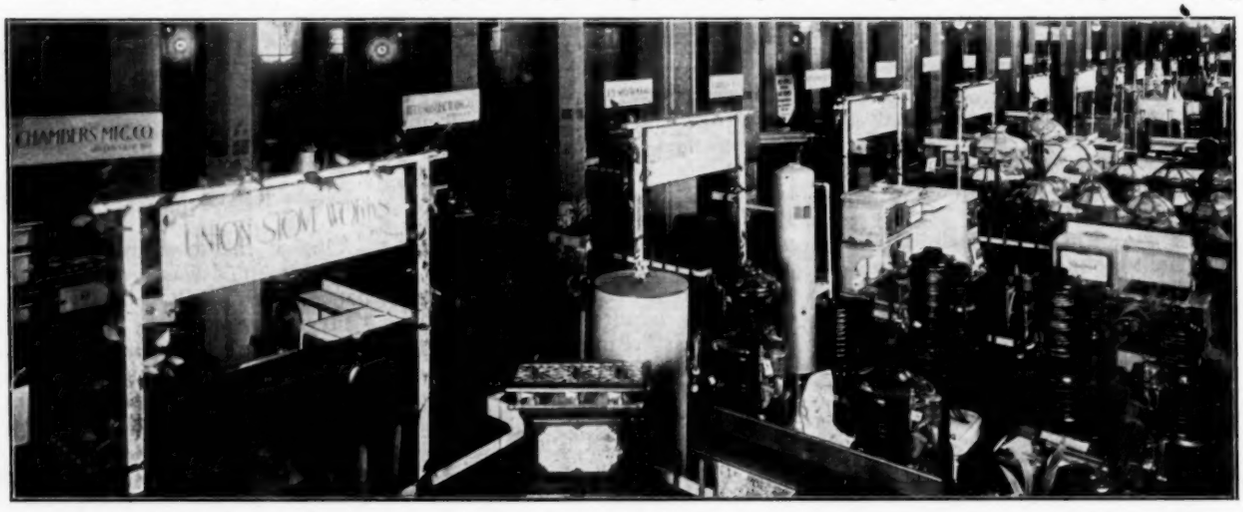
Ballard Also Urges Publicity

Referring to some of the adverse conditions confronting the gas men, Luke L. Ballard of the Pittsburgh Meter Company, said, "This condition can only be offset by a persistent and unremitting educational campaign, through the press and by letter through the mail service, bringing the truth and enlightenment squarely to the attention of the consuming public." He briefly outlined some of the work that is being done along these lines and urged that in the future we conduct our commercial battles along offensive rather than defensive lines. He further stated that the foremost problem in production management at present is the conservation of gas both in natural and artificial plants and pointed out at considerable length the wastage in the manufacture and distribution of gas, making reference to new methods that would eliminate much of the loss. Referring to the four-ounce gas pressure recommended by the Government, he said he had come in contact with gas plants furnishing industrial gas at two ounces pressure and getting wonderful results for the company as well as giving entire satisfaction to the consumer.

He concluded his paper with an appeal for more efficient rate-making methods and went into some detail regarding the Doherty three-part rate.

Meters and Their Maintenance

R. E. Davis, president of the Reliable Meter Repair Company, Houston, Texas, brought out some very interesting facts regarding the handling, testing and general care of gas meters. We pointed out the direct relation of the meter to the gas register and urged more systematic records and care of these instruments. He also impressed upon the various companies the necessity of having



SECTIONAL VIEW OF EXHIBITS AT AMERICAN GAS ASSOCIATION

their men well informed on this subject as a means of educating the public and creating satisfied customers.

OTHER INTERESTING SUBJECTS

The entire program was replete with timely, pertinent talks and discussions, John J. Blautt, sales agent, New Orleans Gas Light Company, presented by proxy a most interesting paper entitled, "Breaking Even on Your Merchandising and Jobbing Departments," while Mr. Duncan of the Equitable Meter Company of Dallas handled the subject, "The History of the Gas Meter," in splendid manner. The entire proceedings of the convention will be printed and will be available to all interested.

C. B. MCKINNEY WILL HEAD ASSOCIATION DURING COMING YEAR

At the conclusion of the three-day program C. B. McKinney of Dallas was elected president. F. L. Weisser of San Antonio was elected first vice-president.

HAROLD G. LEARNED, of Hartford, Conn., is to be the new general manager of the Middletown (Conn.) Gas Light Company, folowing in the footsteps of his father, Charles A. Learned, who has long been general manager of both the Meriden Gas Light Company and the Meriden Electric Light Companies and is considered one of the most able men in the business. His son has been connected with the local companies for several years.

American Section of International Chamber of Commerce Established in Washington

An American section of the newly organized International Chamber of Commerce now functioning at Paris has been established by the Chamber of Commerce of the United States with offices in Washington, D. C. Lacey C. Zapf, formerly assistant manager of the research department of the National Chamber, has been appointed secretary of the American section, and will devote his exclusive attention to that work.

The American section will be the direct representative of the International Chamber of Commerce in this country. In addition to receiving applications of American business men and organizations for membership in the International Chamber, it will be the duty of the American section to keep the International Headquarters, through the American administrative commissioner, located at Paris, informed as to economic, industrial and social conditions in the United States. It will also be charged with putting into effect in the United States resolutions and any other action taken by the International Chamber. National bureaus will also be established in the other associated countries.

The new secretary of the American section was in Paris last June at the organization meeting of the International Chamber and assisted in the work of forming this new body. He was assistant to John H. Fahey, of Boston, who was chairman of the organization committee of the International Chamber. He was also assistant to the secretary of the International Trade Conference held at Atlantic City in 1919 when the preliminary plans were laid for organizing the International Chamber.

Mr. Zapf has had much experience in foreign commerce work. For some time he was special assistant to the director of the Bureau of Foreign and Domestic Commerce of the Department of Commerce and aided in organizing the War Trade Board during the war. He also assisted in organizing the Tanners' Council, an industrial organization created at the request of the War Trade Board to control the importation and distribution of hides and skins and leather raw stock, during the war, and served as general agent in charge of the New York district of the Tanners' Council.

Besides the National Bureau in the United States, there will also be a committee of twenty-five American business men appointed by the Chamber of Commerce of the United States to act in an advisory capacity to the National Bureau.

Baltimore Gas Company Sells 143 Ranges in One Day

The Consolidated Gas Company, Baltimore, Md., recently announced a sale of gas ranges and on Monday from 8.30 to noon sold 143. This may not be a record but it does show that the commercial department of any gas company can be as good or a better seller of gas-burning appliances than any other agency in the community.

CONVENTION, HOTEL PENNSYLVANIA, NEW YORK CITY, NOVEMBER 15-20

Steady Increase in Production Shown by Bituminous Coal Report

Production of soft coal during the week of Oct. 30 not only continued above the 12,000,000-ton mark, but rose to a new maximum for the year. The total output (including lignite and coal made into coke) is estimated at 12,338,000 net tons. This was an increase of 97,000 tons over the preceding week, and except for the week of Oct., 1919, just before the great coal strike, was the largest production since the armistice.

The average production per working day was 2,056,000 tons. For four consecutive weeks the daily output has been above 2,000,000 tons, the daily rate which corresponds to 12,000,000 per week. This is the longest period on record of sustained output at that rate, except during the summer of the war year 1918.

The production of the year 1920 is thus rapidly overtaking that of 1917 and narrowing the lead hitherto maintained by 1918.

The 1920 output is 7,000,000 tons behind 1917, and nearly 42,000,000 tons behind 1918, but is over 51,000,000 tons ahead of 1919. In this connection it should be remembered that production during 1918 exceeded consumption and provided for a net addition to consumers' stocks by the end of the year of approximately 30,000,000 tons. In 1919 the condition was reversed; consumption exceeded production and there was a net draft on stocks of perhaps 40,000,000 tons for the year. In 1917 there was no great change in stocks.

The following figures are based on reports of operating conditions at the mines, submitted weekly by the producers of soft coal. Statements are at present received from about 3,000 mines, representing approximately 60 per cent of the total capacity of the country. The reports are assembled by correspondence, largely through the co-operation of the secretaries of twenty-nine local trade associations. The work of tabulation and analysis is the only part of the task that is performed personally by the staff of the Geological Survey.

The percentages are weighted averages of the running time and reflect only such losses of possible output as accompany an actual closing down of the mines. The result is an analysis of the present situation which discloses in each district the dominant factor limiting production at the moment. It would be unsafe to assume, however, that the same percentages would hold true over an extended period. Elimination of one factor brings others into play; thus overcoming a car shortage may create a condition where the supply of coal exceeds demand and either car shortage or no market may be displaced overnight as the limiting factor by a strike.

The week of Oct. 23 was one of sustained production. The output increased to 12,241,000 tons, the maximum since the coal strike of a year ago. The increasing tonnage was made possible by a gradual elimination of labor trouble and a continued improvement in car supply. The demand was still sufficient to absorb all the coal offered.

The week was marked by a lull in the labor disturbances which have been a factor of importance in recent months. Settlement of a strike in Oklahoma and Arkansas caused labor losses in the first State to decline from 44 to 4 per cent, and in the latter State from 27.9 to 14.8 per cent. As the strike of Oct. 28 had not yet broken out in Colorado there was a general absence of labor disputes in the West. Local disturbances of limited extent were, however, reported in Kansas and Missouri.

In the strike-affected districts of the East the drift back to work continued. Losses due to labor in the Kenova-Thacker field declined from 49.2 to 46.8 per cent of capacity. In Alabama also the time lost on account of labor decreased slightly. Reports were received from 152 mines in that State which produced 265,701 tons during the week of Oct. 23, out of a present capacity of 350,000 tons. The average time worked was 75.9 per cent of full time; of the time lost—24.1 per cent in all—21.1 per cent was ascribed by the operatos to labor shortage or strikes, as compared with 23.2 per cent during the preceding week.

On the average, over the country as a whole, losses attributed to labor amounted to 7.0 per cent of full time, out of a total loss due to all causes of 31.9 per cent. Important as is the labor factor in restricting output in certain localities, over the country at large it is still less important than transportation disability. To that factor were attributed during the week of Oct. 23, losses of 20.8 per cent of full time.

The week of the 23rd was, however, marked by an improvement in car supply. While the loss due to transportation increased in severity in Illinois, Indiana, northern Ohio, northwestern Pennsylvania, the Somerset-Cumberland-Piedmont region, and the Pocahontas field of southern West Virginia, in most other districts it improved. The change for the better was most marked in West Virginia. In the Fairmont region transportation losses declined from 40.4 to 34.1 per cent, and improvement was also reported in the Winding Gulf, New River, Kanawha, and Kenova-Thacker fields. Other districts to experience improvement were the Hazard and Harlan fields of eastern Kentucky, and the Pittsburgh and Westmoreland County regions of western Pennsylvania.

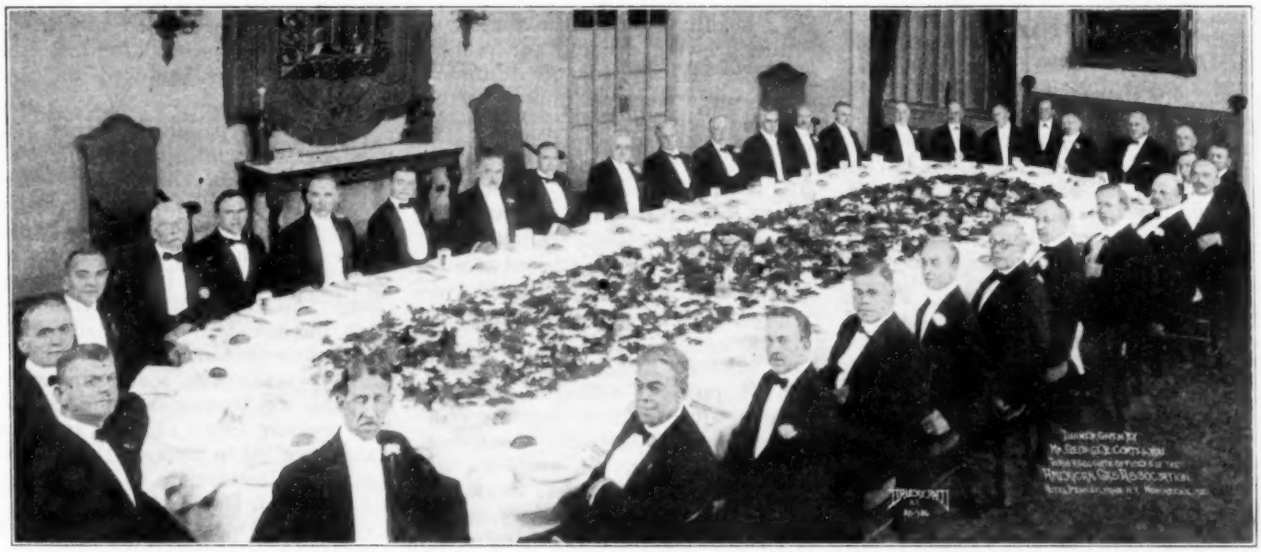
West of the Mississippi car supply on the whole changed for the better. A less satisfactory condition in Colorado was more than offset by improvement reported from Kansas, Missouri, Arkansas and Utah. Mines in the Northwestern States continued to report a favorable car supply.

Of the coal fields of the United States those in which demand presses most persistently on the heels of supply are the northern and middle Appalachians, comprising the States of Pennsylvania, Ohio, West Virginia, Maryland, Virginia and eastern Kentucky. Out of this area must be supplied not only the requirements of the industrial Northeast, but also the great bulk of the exports both overseas and to Canada, the rail and water movement to New England, and the coal shipped via the lakes to the Northwest. The experience of the war years and of the present coal years as well indicates that when a problem of distribution exists anywhere in the country it is likely to be in this northern and middle Appalachian region. Nor is this surprising in view of the fact that the region contributes from 60 to 63 per cent of the country's total output.

The Geological Survey is now in a position to publish weekly statistics of the production in this critical region. The output in January, 1920, was 27,620,000 net tons, practically equal to the monthly average for 1917, and within one and a half million tons of the 1918 average.

Three Dollars for Gas

Notice has been given patrons of the Mount Pleasant (Iowa) Gas Company that the rate will be $3 per 1,000 cu. ft. from Nov. 1. The rate has been $2.10.



Included at the dinner given by Mr. George B. Cortelyou were the following officers and directors of the A. G. A.: Emerson McMillin, M. B. Daly, E. N. Wrightington, J. B. Klumpp, A. P. Post, Arthur Hewitt, D. D. Barnum, Harry A. Norton, Louis Stotz, H. M. Brundage, W. G. Gribbel, A. P. Brill, H. S. Schutt, H. D. Schall, W. H. Barthold, R. B. Harper, F. H. Knapp, Percy H. Hall, L. R. Dutton, George Williams, Philip H. Gadsden, John S. DeHart, George D. Roper, A. B. Macbeth, Howard Bruce, W. Cullen Morris, H. L. Doherty, Charles A. Munroe.

Papers to Be Read at Fuel Sessions at Annual Meeting of Mechanical Engineers

The annual meeting of the American Society of Mechanical Engineers will be held in New York City Dec. 7 to 10. The following phases of the transportation problem will be discussed by authorities in this field:

Railroads — Feeders
Waterways — Motor Trucks
Terminal Problems in New York City

At the professional sessions the following papers on fuel will be presented:

Fuel Supply of World—L. P. Breckenridge.

Low Temperature Distillation of Coal—O. P. Hood.

Fuel Conservation versus Money Conservation—D. M. Myers.

Form Value of Energy in Relation to Its Production, Transportation and Application—Chester G. Gilbert, Jos. E. Pogue.

"There is at present a huge unnecessary waste of fuel in this country. The waste is everywhere. There is no industrial plant in the country where 10 to 30 per cent saving of fuel might not be effected by common sense engineering." The above is a statement made by David Moffat Myers, consulting engineer, New York City, in his paper on "Fuel Conservation." Mr. Myers not only points out the need for fuel conservation but outlines a definite policy and its requirements.

"The Fuel Supply of the World," by Professor L. P. Breckenridge of Sheffield Scientific School, Yale University, will present the latest available data on the supply, production and use of the various fuels of the world, particularly of the United States. Mr. Hood's paper will discuss the economic factors in the distillation of fuels and will outline future fuels for expansion of the use of this process. The paper by Messrs. Gilbert and Pogue reviews the major sources of energy from the point of view of "form value," defined as an intangible quality expressing the broad applicability of the energy form in B.t.u. units; and "resource value," defined as an intangible quality expressing the availability of energy in terms of location and chemical character of its source, and involving the potentiality of chemical control for purposes of multiple production.

Plan Merger of Marland and Kay Gas

In a letter to stockholders of the Marland Refining Company and the Kay County Gas Company officials make known their reason and plans for merger of the two companies.

As at present constituted the Marland Refining Company consists of a producing, refining and marketing organization. The Kay County Company operates mainly as a pipe line organization, linking the Marland production with its refineries.

The result of this is the formation of the Marland Oil Company of Delaware as a holding company in which stockholders of the Marland Refining Company will receive one share of stock for each ten shares of the refining company stock turned in.

Kay County Gas stockholders are to make the exchange on the basis of one share for each twenty shares of Kay County stock exchanged. Holders of a substantial majority of the stock in both companies have expressed their approval of the plans of exchange and stockholders in general are asked to deposit their holdings for exchange on or before Nov. 26.

The net value of the property owned by Marland Refining Company per outstanding share is $6.76, and that owned by Kay County Gas Company per outstanding share of Marland Refining Company represents almost exactly twice the property value of a share of Kay County Gas Company.

Light and Power Earnings Increase

Stone & Webster report that the gross earnings of the Blackstone Valley Gas & Electric Company for the month of September show an increase of $37,192 and a net increase of $3,518. For the twelve months ending Sept. 30 the gross earnings show an increase of $565,073, with net earnings of $254,083.

The Connecticut Power Company shows an increase in gross earnings for the month of September of $18,597 and an increase in net earnings of $2,635.

Louisville Threatened with Gas Famine

Due to the fact that at present rates gas is approximately five times as cheap as coal, gas consumption for heating purposes, will be greater this year than ever before and Louisville, Ky., will face a gas famine with the first serious drop in temperature, especially if that drop should continue for several days, states Dr. Harry M. Limbach, city gas inspector of Louisville.

Every gas meter in the city is in use, according to Dr. Limbach, because every house and apartment is occupied, and during the summer numerous gas appliances and gas furnaces to utilize gas for heating purposes, were installed in Louisville.

An increase in gas consumption can be expected, Dr. Limbach said, of about 250,000 cu. ft. with each drop of one degree in temperature. Even with the improvements that are being rushed to completion in the eastern Kentucky gas fields, where much of Louisville's gas comes from, the supply be insufficient to meet the demands unless consumers use more coal and less gas for heating purposes.

It is said that the present capacity of the gas lines is 12,000,000 cu. ft. daily, with a reserve stock of 5,000,000 cu. ft. in containers.

City officials said that the Louisville Gas & Electric Company hopes to be able to increase the present capacity of 12,000,000 cu. ft. to 16,000,000 shortly after January 1, at which time improvements will have been almost completed. There is a possibility that the supply for Louisville will be further increased if the gas fields give the expected supply.

Empire Gas & Fuel Reports Production of 35,000 Barrels Daily

Frank W. Frueauff, vice-president of the Cities Service Company and president of the Empire Gas & Fuel Company, who has just returned from the mid-continent field and the Doherty organization's properties in the Middle West, reports that the company's production in the mid-continent field is running more than 35,000 bbl. of oil daily.

Total sales of the company's refined products for the first nine months of this year were 60.3 per cent in excess of such sales for the corresponding 1919 period. The company's operations in Mexico are on a healthy basis. Anticipating a future growing demand for refined products, Mr. Frueauff outlined plans for extensive improvements and additions to refineries of companies in which he is interested.

Gas Law Unconstitutional

Justice Mayer, in the United States District Court, has handed down an opinion indicating that the 80 per cent gas law of 1906 was unconstitutional in so far as it applies to the New York & Queens Gas Company, which supplies Flushing, L. I., and vicinity. It is shown that the cost of producing gas has increased through conditions growing out of the war and through other economic causes until the figure now reached by this particular concern is $1.0076, without making any allowances for return on the investment. The justice particularly emphasized the fact that the cost of oil has increased because of its use for purposes not foreseen fourteen years ago. The matter of fixing a new rate rests with the legislature, and it is hoped that that body will give the problem careful and immediate attention. It is thought that the company will likely petition for a rate in the neighborhood of $1.50 per 1,000 cu. ft. The decision is an extremely important one to the gas companies of the State, opening a way for these concerns to rehabilitate themselves and again reach a position where new capital can be obtained for many greatly needed improvements.

Regulation Act vs. English Gas Companies

The gas regulation act of 1920, recently passed in England, gives power to the Board of Trade to substitute for the present sliding scale a charge based on "thermal units," or, in other words, according to the quality of gas supplied. The price to the consumer can be varied when the Board of Trade is satisfied that costs of production have altered. Local authorities, or a body of not less than twenty consumers, have power to make application that charges should be revised. Thus the hardships under which gas undertakings have labored in the past few years have at last been recognized, and stockholders in efficiently conducted companies can now expect to see a reasonable return on their investments. Minimum rates of dividends from 5 to 6 per cent have been fixed, and stockholders are entitled to participate in further profits after the cost of gas has been reduced to consumers.

Before the passing of this act, most gas companies were subject to the sliding scale. This provided that dividends on ordinary shares and stocks should be regulated according to the price charged for every thousand feet of gas. For each penny charged above or below the standard price the standard rate of dividend was reduced or increased by a fixed sum per cent. For instance, owing to high working costs, the South Metropolitan Gas Company in 1918 was compelled to increase the charge for gas to consumers to 4 shillings per 1,000 cu. ft. To pay the statutory sliding scale dividend at the rate of £3 4 shillings per cent upon the ordinary stock, the company found it necessary to draw on its reserve for £23,303.

The new act also provides that annual accounts and returns are to be submitted to the Board of Trade, and that copies of these accounts shall be furnished to local authorities and also placed on sale for the public. In the past, most companies published accounts half yearly, but, as a result of this act, many companies are taking advantage of the changes required to publish annual accounts.

Portland Gas Earnings Show Slight Increase

Twenty-nine per cent increase in operating expenses of the Portland (Ore.) Gas & Coke Company in September, with 18 per cent increase in gross earnings, brought the net earnings down to only 5 per cent greater than for the corresponding month of last year. However, for the period of twelve months to the end of September the net earnings showed 12 per cent increase over the preceding yearly period.

Following is the company's summarized report to shareholders:

	Sept. 1920	Twelve Months
Gross earnings..	$224,247	$2,466,655
Operating expenses	131,907	1,460,068
Net earnings ..	$92,340	$1,006,587
Balance after deducting fixed charges...	60,317	640,286

Arizona Light & Power Association Asks State for Relief

The Arizona Gas, Electric Light & Power Association, composed of practically all the gas and electric companies of the State, is seeking relief in the matter of depreciation charges and asking for increases in the return which they are allowed to earn, in order that they may be able to sell their securities so as to provide the large additions necessitated by the rapid growth of the cities of Arizona.

The membership of the association includes the public utilities in Tucson, Phoenix, Yuma, Globe, Tempe, Chandler, Nogales, Bisbee, Safford, Flagstaff, Kingman and Prescott.

The officers of the various companies which are members of the association are: Frank Curley, general attorney for the Tucson Gas, Electric & Power Company; G. H. Walbridge of New York, president, and H. L. Aller, vice-president and general manager of the Pacific Gas & Electric Company; R. W. Wilde, vice-president and general superintendent, and W. A. Richardson of San Francisco, general counsel of the Desert Power & Water Company of Kingman; F. S. Viele, president of the Arizona Power Company and the Prescott Gas & Electric Company; G. T. Herrington, manager of Flagstaff Electric Light Company; H. L. Chandler, president of Southside Gas & Electric Company of Tempe; H. B. Johnson, manager of Bisbee Improvement Company; R. G. Arthur, manager of Douglas Gas Corporation and Douglas Light & Traction Company; W. S. Sultan, general manager of Globe Light & Power Company; R. M. Moore, president, Yuma Light, Gas & Water Company; Spiro Proto, president, Arizona Gas & Electric Company of Nogales.

H. L. Aller, vice-president and general manager of the Pacific Gas & Electric Company, in stating the purpose of the utilities asking for relief at this time, said:

"The public utilities of the country are facing a grave situation. The railways have faced similar difficulties and have been given relief by the interstate commerce commission. The same sort of relief must be given to the gas and electric utilities of the State or they will be unable to operate.

"The corporation commission allows the companies to set aside reserves for deprecition which are used to replace wornout property. These reserves are based upon percentage of the installation cost of the various elements of the property. For example, if a pole cost $12 to install ten years ago and will last ten years, there has been set aside $1.20 per year to replace it, and now, when it becomes necessary to set a new pole in its place, there is $12 available from the reserves for that purpose. But the costs have so advanced that it costs $25 to replace that pole and unless the companies are permitted to increase the amounts of depreciation so set aside, they will become run down and will be unable to give service to the public. These requested increases in depreciation are temporary and will be reduced when costs or replacement fall.

Second Difficulty

"The second difficulty confronting the companies is caused by the rapid growth of the cities and towns of the State. The companies are required to make larger additions to their plants and distribution systems to meet the public requirements.

"As an example, the Pacific Gas & Electric Company in Phoenix last year expended $400,000 for such property additions and this year is spending $370,000 for the same purpose. Our budget for the next three years calls for $400,000 to $500,000 a year for extensions and additions. These large amounts of money have to be raised by the sale of additional stock and bonds of the company which are sold to thousands of investors all over the country.

"The corporation commission allows the public utilities to charge rates for gas and electricity which are only sufficient to pay operating expenses and a percentage of the value of the property, which they determine. This latter percentage they call the 'allowable rate of return.' The percentage which they fixed eight years ago as the allowable rate of return was sufficient to permit the companies to pay such dividends and rates of interest on bonds that investors would buy the stocks and bonds of Arizona public utilities and thus the necessary money for additions to plant was provided.

"But to-day the interest and dividend rates on all other classes of stocks and bonds have increased so that investors place their money in those other securities which pay the higher interest and refuse to purchase the securities of Arizona utilities. There is no way that we can force a man to buy a security and so there is no means whereby we can secure the necessary money.

"The prosperity of the State will be vitally affected, the growth of every city will be retarded and every individual will suffer accordingly, if the utilities are prevented from expanding to meet the growing public demand. In certain parts of California they are facing such conditions to-day. Factories cannot operate full time, irrigation projects cannot be constructed, additions to cities cannot be served, all because the public utilities are able to meet the demand for additional service."

"This is not an application for rate increases. It is on the other hand an application for a modification of orders of the commission which are fundamental and on which the very existence of the public service companies depend.

"If any company finds it necessary to increase its rates for gas and electricity in order to meet these changed conditions that will be a subject for individual action by that company, which must apply to the commission for an increase in rates and a public hearing must be held concerning it."

New Pressure Booster in Operation at La Crosse

The Wisconsin-Minnesota Light & Power Company, La Crosse, Wis. has just received and installed at the gas works a low-pressure fan booster which will be used to boost the gas pressure as it leaves the gas holder and enters the distribution system.

There has been much delay in obtaining this booster but it was finally received and the work of installation completed. This booster is on the line and its operation has the effect of increasing the pressure, especially at the time of the peak loads which occur at the dinner and supper periods.

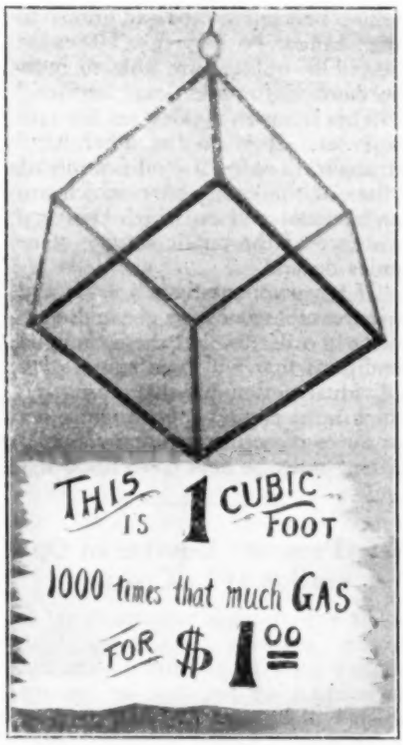
In addition to installing this low-pressure booster, plans are now being made for laying a larger trunk main from the works to North La Crosse has greatly increased and the present 4-in. high-pressure main and 6-in. low-pressure main have been overtaxed. Definite plans regarding the size of this main and the time of laying it will be announced later.

Novel Window Display Attracts Attention

The accompanying photograph shows a very novel way of attracting attention of the public to gas as a heating medium.

In the show window of the Portland (Ore.) Gas & Coke Company was hung a cube consisting of six sheets of glass, each 12 x 12 in. The cube was suspended by a wire with a card attached as shown in the picture.

It attracted a great deal of attention and many amusing situations resulted. One man asked how many cubes it would take to heat



a room 14 x 16. Another wanted to know if it was a new way of delivering gas like ice in chunks.

G. & E. Securities Company Increases Dividends

Gas & Electric Securities Company, New York City, declared the regular monthly dividend of one-half of 1 per cent in cash on the common stock and also a dividend of three-quarters of 1 per cent payable in common stock. Previously the common stock paid one-half of 1 per cent in cash and one-half of 1 per cent in stock. Dividends are payable on January 1 to stock of record on December 15.

Employees Sell Two-Thirds of Public Service Stock

More than two-thirds of the block of preferred stock being offered for cash by the Public Service Company of Northern Illinois have been sold throughout the territory by employees acting as the sales force. The entire allotment it is believed will have been disposed of by an early date. Additions to the number of the company's stockholders made as effects of the present sale and the one preceding it earlier in the year create a list containing 12,000 names. The newcomers are residents of every town and community in the territory. The fact is of great importance. It has emphasized the company's position as a local enterprise in the Illinois counties and the towns therein where its service is performed. The accomplishment of this purpose—the creation of a large local co-ownership interest in the company—was and is one of the chief objects of the sale.

A late investment department bulletin names recent prize winners among the employees. Three having sold the stipulated number of shares, received each one share of the company's preferred stock and with the others on the list were given money prizes.

Pacific G. & E. Overearns Its Dividends

Gross earnings of the Pacific Gas & Electric Company for the first nine months of the current year were $25,879,472, according to the company's latest statement. This represents an increase of $6,414,535 over the corresponding period of 1919.

This remarkable increase in earning capacity was due partly to the acquisition of new territory and in part to a more intensive cultivation of the field already covered by the company's operations.

The gain for the nine months is the more notable in that, with one exception, it is greater by $1,000,000 than the entire gross earnings of any similar utility in the State.

The balance remaining for preferred stock dividends after providing for operating expenses, fixed charges and every foreseeable contingency, was $3,083,138.87. The three quarterly preferred stock dividends so far paid this year aggregate $1,317,797.38, leaving a margin of safety over these dividends of $1,765,341.49.

In other words, the company earned its preferred stock dividends in this period 2.34 times.

Massachusetts Gas Earnings for September Practically the Same as Last Year

Combined net earnings available for dividends of subsidiary companies of Massachusetts Gas Companies for Sept. were $360,654, an increase of $743 or 0.21 per cent compared with corresponding month a year ago.

September earnings compare:

GAS DEPARTMENT

	1920	1919
Boston	$32,589	$53,041
East Boston	6,223	4,556
Quincy	7,276	8,721
Newton	5,265	10,100
Total	40,823	76,420
*Commercial Cos.	319,830	283,449
Total all Cos.	360,654	359,911

*Not including Beacon Oil Company.

Increases in gas outputs compare as follows (in per cent):

	1920	1919
Boston	2.45	4.44
East Boston	4.59	dec. 1.76
Quincy	6.98	2.95
Newton	4.26	8.37

Net earnings of subsidiary companies for nine months ended Sept. 30 compare:

	1920	1919
Boston	$522,106	$785,721
East Boston	39,448	7,315
Quincy	52,250	54,758
Newton	53,540	30,004
Total	667,345	877,798
*Commercial Cos.	2,737,379	1,650,878
Grand total	3,404,724	2,528,676

*Not including Beacon Oil.

Gas Company Passes Dividend

American Gas Co., Carrollton, O., passed its dividend. Quarterly dividends at the rate of 4 per cent per annum were resumed last February. Unsatisfactory earnings were stated to be the reason for passing the dividend.